

Nationwide House Energy Rating Scheme — Class 2 Summary

NatHERS Certificate No. #HR-6DIV8O-03

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Property

Address 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP 13a//342819

NatHERS climate zone 56 - Mascot AMO

Accredited assessor



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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-KEX6GP-02	A0201	13.0	15.4	28.4	7.8
HR-7RHIVQ-02	A0202	4.1	13.2	17.2	8.7
HR-4HAWNB-02	A0203	22.6	16.9	39.6	6.9
HR-NSDK18-02	A0204	31.2	17.0	48.2	6.2

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
HR-H5ZX0I-02	A0205	32.7	15.6	48.3	6.2
HR-MMX6YV-02	A0206	14.0	12.8	26.8	7.9
HR-FV6D97-02	A0301	16.0	14.1	30.0	7.7
HR-V2DUIL-02	A0302	6.4	11.7	18.1	8.7
HR-ZD6XES-02	A0303	6.9	12.2	19.1	8.6
HR-EJNPSS-02	A0304	43.5	21.1	64.6	5.1
HR-QHJ80M-02	A0305	33.0	20.2	53.2	5.8
HR-VSSC10-02	A0306	18.8	22.6	41.4	6.8
HR-FX2CZA-02	A0307	33.1	16.7	49.8	6.1
HR-PAEB6M-02	A0308	17.7	11.9	29.6	7.7
HR-6ADEAW-02	A0401	19.8	11.1	30.9	7.6
HR-JIUV8J-02	A0402	9.6	8.1	17.8	8.7
HR-GW2UDC-02	A0403	10.1	8.8	18.9	8.6
HR-QJMAG4-02	A0404	13.7	18.1	31.8	7.5
HR-R9YXH1-02	A0405	24.6	19.0	43.7	6.6
HR-ICAKPE-02	A0406	22.2	18.7	40.9	6.8
HR-DTWRSG-02	A0407	37.8	13.1	50.9	6.0
HR-OPRWPW-02	A0408	21.0	8.9	29.9	7.7
HR-71PPQJ-02	A0501	28.6	22.6	51.3	5.9
HR-YQDCV8-02	A0502	13.3	25.4	38.7	7.0
HR-UEGHBQ-02	A0503	37.1	19.4	56.5	5.6
HR-J3VKRO-02	A0504	37.9	13.1	51.0	5.9
HR-WB18MP-02	A0506	30.4	18.6	48.9	6.2
HR-XZCTFX-01	B0101	35.9	17.5	53.4	5.8
HR-JZRXHR-02	B0102	34.6	22.4	57.0	5.6
HR-BPLRIL-02	B0103	35.2	21.4	56.6	5.6
HR-79B8KS-02	B0104	44.2	9.8	54.0	5.8
HR-VX79VW-01	B0105	30.1	16.7	46.8	6.3
HR-G1NXAH-01	B0106	44.2	11.3	55.5	5.7



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-BTCTAJ-02	B0201	44.4	19.4	63.8	5.1
HR-JRIH84-02	B0202	30.7	15.8	46.5	6.4
HR-0C2UDN-02	B0203	20.8	19.7	40.6	6.9
HR-VLWLHC-02	B0204	29.9	20.5	50.5	6.0
HR-GS2WWA-02	B0205	21.5	15.3	36.9	7.2
HR-ACICVA-02	B0206	38.3	12.8	51.1	5.9
HR-Y3UWJS-02	B0301	24.8	28.3	53.1	5.9
HR-YU11AL-02	B0302	21.7	16.3	38.0	7.1
HR-YJHI37-02	B0303	15.5	17.6	33.0	7.4
HR-ZWSNJD-02	B0304	35.4	18.4	53.8	5.8
HR-9ZNQNH-02	B0305	16.4	18.4	34.8	7.3
HR-TGGTRK-02	B0306	24.9	15.6	40.5	6.9
HR-WQBFSH-02	B0401	25.5	25.0	50.5	6.0
HR-WZ2KG4-02	B0402	23.8	12.9	36.7	7.2
HR-5ST2MQ-02	B0403	18.9	13.0	31.9	7.5
HR-AMAI4O-02	B0404	40.9	15.5	56.3	5.6
HR-1S0397-02	B0405	19.9	14.9	34.8	7.3
HR-Z69FBN-02	B0406	22.4	12.6	35.0	7.3
HR-N9UXQX-02	B0501	45.3	24.3	69.6	4.8
HR-6UJOR5-02	B0502	43.0	12.0	55.0	5.7
HR-BCTAX6-02	B0503	30.0	15.2	45.3	6.4
HR-PDB7Z0-02	B0504	39.0	15.7	54.7	5.7
HR-2LASXT-02	B0505	36.0	14.7	50.7	6.0
HR-79E6DM-02	B0506	42.0	12.3	54.2	5.8
HR-I1WFBR-02	C0101	43.5	10.2	53.7	5.8
HR-GN8YL2-02	C0102	31.6	18.7	50.4	6.1
HR-A694YX-02	C0103	17.0	23.8	40.7	6.9
HR-G4GMOQ-02	C0104	39.6	20.4	60.0	5.4
HR-XN8AB1-02	C0201	31.4	19.9	51.4	5.9



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-KEUKUL-02	C0202	17.2	13.3	30.5	7.6
HR-BXSEIA-02	C0203	14.2	16.7	31.0	7.6
HR-E5DP13-02	C0204	18.9	15.1	34.0	7.4
HR-ELFIRG-02	C0205	27.5	20.9	48.3	6.2
HR-9FAPSS-02	C0301	18.4	28.3	46.7	6.4
HR-5YNXDO-02	C0302	9.4	18.9	28.4	7.8
HR-G8E6ZZ-02	C0303	14.6	16.2	30.8	7.6
HR-JPZXTR-02	C0304	19.0	16.0	35.0	7.3
HR-FZU6XY-02	C0305	9.5	29.0	38.5	7.0
HR-PHWNLW-02	C0401	22.1	23.2	45.3	6.4
HR-ZRPDYX-02	C0402	12.0	15.2	27.2	7.9
HR-55WU18-02	C0403	17.6	12.8	30.4	7.6
HR-Z5I18Z-02	C0404	23.3	12.7	36.0	7.2
HR-KFNMWU-02	C0405	17.2	27.5	44.7	6.5
HR-FADSRX-02	C0501	33.4	27.0	60.4	5.3
HR-KDXKR6-02	C0502	29.3	15.8	45.1	6.4
HR-EKQ3PL-02	C0503	31.6	13.3	44.9	6.5
HR-G62ZS7-02	C0504	39.7	13.1	52.9	5.9
HR-997BLZ-02	C0505	33.9	28.0	61.9	5.3
HR-NHY4UQ-02	D0101	25.6	11.2	36.8	7.2
HR-WWP2XK-02	D0102	33.9	18.0	51.9	5.9
HR-I5HFVI-02	D0103	45.4	9.4	54.7	5.7
HR-4FFLR6-02	D0104	14.2	19.2	33.4	7.4
HR-1ETL37-02	D0105	45.2	15.1	60.3	5.4
HR-D93410-02	D0106	29.7	22.5	52.2	5.9
HR-ZD7BB1-02	D0201	13.3	11.1	24.4	8.1
HR-IKTTRQ-02	D0202	29.1	18.5	47.6	6.3
HR-Q2E5Z1-02	D0203	25.7	27.3	53.0	5.9
HR-PU49WI-02	D0204	34.7	23.2	57.9	5.5



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-814D3D-02	D0205	21.9	20.9	42.8	6.7
HR-3FGRYG-02	D0206	39.7	21.9	61.5	5.3
HR-2IURMM-02	D0207	29.4	9.9	39.4	6.9
HR-WMC4UR-02	D0208	5.2	19.3	24.5	8.1
HR-QQN25S-02	D0301	11.6	15.3	26.9	7.9
HR-HISO1L-02	D0302	18.3	23.3	41.5	6.8
HR-N70MH7-02	D0303	23.7	28.2	51.9	5.9
HR-PB47VV-02	D0304	24.0	27.5	51.5	5.9
HR-87HD5G-02	D0305	28.8	13.2	42.1	6.7
HR-SR84JU-02	D0306	42.2	26.3	68.5	4.9
HR-98Y5V8-02	D0307	24.0	12.8	36.8	7.2
HR-NLKPPH-02	D0308	5.4	19.3	24.7	8.1
HR-NZHOOC-02	D0401	13.8	11.5	25.3	8.1
HR-BYWIHK-02	D0402	18.3	17.9	36.2	7.2
HR-W9BS1Y-02	D0403	27.6	18.7	46.3	6.4
HR-HY90I5-02	D0404	20.2	22.0	42.1	6.7
HR-5OMDDY-02	D0405	25.2	10.8	36.0	7.2
HR-66RHDE-02	D0406	44.8	24.8	69.6	4.8
HR-18XPEZ-02	D0407	22.4	9.8	32.2	7.4
HR-48YZKJ-02	D0408	5.8	18.2	24.0	8.2
HR-6FHNS8-02	D050	17.5	18.1	35.6	7.2
HR-JBVEMG-02	D0501	21.9	11.7	33.7	7.4
HR-HE3YXX-02	D0503	35.4	13.2	48.5	6.2
HR-5NXI2L-02	D0504	25.3	22.3	47.7	6.3
HR-LE8KXK-02	D0505	25.9	10.5	36.4	7.2
HR-HFX6AU-02	D0506	37.4	20.6	58.0	5.5
HR-6QE2U8-02	D0507	17.0	9.2	26.2	7.9
HR-RWFVOE-02	D0508	4.8	18.5	23.3	8.2
HR-2VR5V4-02	D0601	10.6	23.3	34.0	7.4



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HR-XHBWOT-02	D0602	43.1	16.1	59.3	5.4
HR-3FAQWY-02	D0603	36.6	9.2	45.8	6.4
HR-5LOMTC-02	D0604	45.1	17.0	62.1	5.2
HR-5YGKYX-02	D0605	22.6	11.1	33.7	7.4
HR-3QHNFK-02	E0101	16.8	17.3	34.2	7.3
HR-GKG5UQ-02	E0102	44.6	8.7	53.2	5.8
HR-JJSBIP-02	E0103	37.6	17.1	54.7	5.7
HR-I327ZQ-02	E0104	42.1	9.0	51.1	5.9
HR-C7MQ2A-02	E0105	14.8	15.1	29.8	7.7
HR-I3INAV-02	E0106	21.1	22.4	43.4	6.6
HR-03EVYM-02	E0107	14.7	16.6	31.3	7.6
HR-3QHEP2-01	E0201	3.1	16.1	19.2	8.6
HR-VV8SFW-01	E0202	30.7	18.0	48.7	6.2
HR-8E64EB-01	E0203	25.5	20.0	45.5	6.4
HR-SQWSC7-01	E0204	32.6	20.6	53.2	5.8
HR-ZWHULK-01	E0205	31.2	12.1	43.2	6.6
HR-YMIIV2-01	E0206	25.5	21.1	46.6	6.4
HR-17TNCN-01	E0207	34.2	19.5	53.7	5.8
HR-PMG3VQ-01	E0208	40.6	12.2	52.8	5.9
HR-4ZUE82-01	E0209	23.5	16.2	39.7	6.9
HR-H91DZS-01	E0210	16.7	20.4	37.1	7.1
HR-BB3MEA-01	E0211	33.0	26.8	59.9	5.4
HR-5WOU9V-01	E0212	9.0	15.7	24.7	8.1
HR-FZ30EF-02	E0301	2.4	15.8	18.2	8.6
HR-6NXU71-02	E0302	10.4	13.9	24.2	8.1
HR-GBWI9N-02	E0303	27.3	16.9	44.2	6.6
HR-9BBQVD-02	E0304	22.3	22.6	45.0	6.5
HR-KGUY7-02	E0305	13.8	20.6	34.4	7.3
HR-I5757C-02	E0306	37.8	15.9	53.7	5.8



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HR-5DFB0W-02	E0307	16.3	16.7	33.0	7.4
HR-Z6SLH9-02	E0308	13.5	17.3	30.8	7.6
HR-N3WP8H-02	E0309	5.1	13.6	18.7	8.6
HR-5J6R7Z-02	E0310	6.1	16.8	22.9	8.3
HR-739JT6-02	E0311	12.7	21.8	34.5	7.3
HR-TYZCTL-02	E0401	1.0	15.4	16.4	8.8
HR-1KC90Y-02	E0402	6.6	26.8	33.4	7.4
HR-5KBEAK-02	E0403	22.0	19.8	41.7	6.8
HR-VS1JJC-02	E0404	27.3	20.5	47.8	6.3
HR-Z5A04B-02	E0405	13.6	21.1	34.7	7.3
HR-NC9P95-02	E0406	37.7	15.7	53.4	5.8
HR-A6ZCGZ-02	E0407	16.7	16.3	33.1	7.4
HR-LNDT7F-02	E0408	14.9	15.2	30.0	7.7
HR-DZKGZV-02	E0409	4.8	13.7	18.6	8.6
HR-C7SPLU-02	E0410	4.2	16.9	21.2	8.4
HR-KES7H3-02	E0411	8.5	23.5	32.0	7.5
HR-LIAPAI-02	E0501	5.7	12.2	18.0	8.7
HR-THXYIY-02	E0502	18.8	23.2	42.0	6.8
HR-U5213P-02	E0503	37.8	16.2	54.0	5.8
HR-PT5VZY-02	E0504	34.0	15.1	49.1	6.2
HR-9LGBDD-02	E0505	15.8	27.8	43.7	6.6
HR-D6KTNQ-02	E0506	27.5	15.1	42.7	6.7
HR-D4QRU2-02	E0507	22.9	14.8	37.7	7.1
HR-TLNSPC-02	E0508	20.7	13.1	33.8	7.4
HR-KKURX1-02	E0509	7.7	12.2	19.8	8.5
HR-GTE0SP-02	E0510	7.4	14.3	21.7	8.4
HR-F5HTUK-02	E0511	12.9	20.7	33.5	7.4
HR-2R2THB-02	E0601	31.3	15.1	46.4	6.4
HR-CCGSUP-02	E0602	20.7	28.6	49.3	6.1



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Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-94JKLL-02	E0603	39.0	14.6	53.6	5.8
HR-T9FDLX-02	E0604	34.9	16.9	51.8	5.9
HR-FZZ2CE-02	E0605	33.5	13.5	47.0	6.3
HR-L4I1K3-02	E0606	12.2	11.9	24.1	8.2
HR-IBVW9N-02	E0607	11.2	13.6	24.8	8.1
HR-AQ8G2B-02	E0608	18.6	20.6	39.2	6.9
HR-QH2DPW-02	E0609	10.7	13.9	24.6	8.1
HR-IUOAYR-01	F0201	35.0	26.0	61.0	5.3
HR-X75X64-01	F0202	14.7	22.8	37.5	7.1
HR-QROVCG-02	F0301	29.9	14.4	44.3	6.6
HR-6YPWRB-02	F0302	36.2	21.5	57.7	5.5
HR-VI147K-02	F0303	26.7	23.0	49.7	6.1
HR-1QPVXH-02	F0304	10.4	20.3	30.7	7.6
HR-M55GDX-01	F0305	21.8	26.9	48.7	6.2
HR-LPXJHT-02	F0306	7.1	17.4	24.5	8.1
HR-0MKF9W-02	F0307	9.8	20.1	29.9	7.7
HR-J3JPTB-01	F0308	21.1	19.3	40.4	6.9
HR-PZJ46R-02	F0401	30.5	14.0	44.5	6.5
HR-H30PK7-02	F0402	36.6	21.3	57.9	5.5
HR-FGCG8K-02	F0403	26.9	22.4	49.3	6.1
HR-Q2KM1H-02	F0404	10.2	19.3	29.5	7.7
HR-5Y0UT4-01	F0405	18.0	23.1	41.1	6.8
HR-EYHR4E-02	F0406	3.8	17.0	20.8	8.4
HR-UXRM44-02	F0407	8.3	20.2	28.4	7.8
HR-R4JJZO-01	F0408	25.6	16.6	42.2	6.7
HR-8CQUKL-02	F0501	37.4	12.3	49.8	6.1
HR-16J4QD-02	F0502	44.5	20.4	64.9	5.1
HR-K1CJC7-02	F0503	34.2	15.7	49.9	6.1
HR-OU12MS-02	F0504	14.7	13.0	27.7	7.9



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Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-19HZ97-01	F0505	18.5	23.1	41.6	6.8
HR-TCIROQ-02	F0506	11.2	14.7	25.9	8.0
HR-S18PDQ-02	F0507	13.5	18.5	32.0	7.4
HR-HPPAAR-01	F0508	26.2	15.9	42.1	6.7
HR-ENGFEN-02	F0601	43.3	20.1	63.4	5.2
HR-JNPK0A-02	F0602	33.6	14.4	48.0	6.3
HR-JFXOD6-02	F0603	9.0	19.5	28.5	7.8
HR-3ICRJB-01	F0604	15.9	23.4	39.2	6.9
HR-K1I4SL-02	F0605	13.8	19.1	32.8	7.4
HR-I4E49G-02	F0606	20.6	11.3	31.9	7.5
HR-QQIXDO-02	F0701	30.8	16.6	47.3	6.3
HR-IDGTZG-02	F0702	36.4	14.0	50.4	6.0
HR-EE0UAN-02	F0703	9.4	17.9	27.2	7.9
HR-W6WQA7-01	F0704	14.8	22.2	37.0	7.1
HR-J9BC49-02	F0705	35.3	11.5	46.8	6.3
HR-CB4R06-02	F0706	35.7	12.5	48.2	6.2
HR-4DG1VZ-02	F0801	39.4	16.9	56.3	5.6
HR-NNPVN1-02	F0802	27.4	16.3	43.7	6.6
HR-RLSL30-02	F0803	13.2	16.5	29.7	7.7
HR-TCQCVX-01	F0804	27.3	22.0	49.3	6.1
HR-A2Y7GA-02	F0805	43.1	12.3	55.4	5.7
HR-CL3R00-02	F0806	40.0	10.9	50.8	6.0
HR-DIYBLR-02	0505	42.6	16.9	59.5	5.4
Average	230x (Total)	24.1	17.4	41.5	6.8



Explanatory Notes

About this report

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

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

Disclaimer

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-KEX6GP-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0201, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	50.4	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	54.7	56 - Mascot AMO
Garage	0.0	



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

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
13.0	15.4
MJ/m ²	MJ/m ²

About the rating

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Verification

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Certificate Check

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Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01	2100	2520	Awning	30	N	None
Bedroom 01	ALM-002-01 A	W02	2700	2400	Sliding	45	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*
Kitchen/Living	ALM-001-01 A	W03	2700	2222	Awning	30	N	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3016	N		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3204	E	2821	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	315	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2900	N	3327	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	262	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	67.2	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.5	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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.

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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-7RHIVQ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0202, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 52.2	Suburban
Unconditioned* 4.3	NatHERS climate zone
Total 56.5	56 - Mascot AMO
Garage 0.0	



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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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.

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

8.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

17.2 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
4.1	13.2
MJ/m ²	MJ/m ²

About the rating

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

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

Provisional* values

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
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
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-003-01 A	W05	2700	889	Casement	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*
Bedroom 01	ALM-001-01 A	W06	2100	2560	Awning	30	N	None
Kitchen/Living	ALM-002-01 A	W04	2700	2100	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3196	W	2820	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2901	N	3327	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	68.8	2.00
INT-PB	Internal Plasterboard Stud Wall	21.2	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.2	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-4HAWNB-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0203, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	90.8	Suburban
Unconditioned*	3.7	NatHERS climate zone
Total	94.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name Duncan Hope

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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.

6.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

39.6 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
22.6	16.9
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-4HAWNB-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
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
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	1800	Sliding	45	E	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 02	ALM-001-01 A	W10	2100	2575	Awning	30	N	None
Bedroom 02	ALM-003-01 A	W09	2700	900	Casement	90	E	None
Bedroom 03	ALM-001-01 A	W08	2700	900	Awning	60	N	None
Kitchen/Living	ALM-002-01 A	W07	2700	2949	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	1800	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	1800	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
EMPTY-WALL	Empty Wall	0.32	Light (Surfmist)	0.00	No
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3013	E	3328	Yes
Bedroom 01	EMPTY-WALL	2740	4799	S		No
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	N		No
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3587	E	8959	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	1567	N	3736	Yes
Ensuite	EMPTY-WALL	2740	1600	S		No
Hallway	EMPTY-WALL	2740	2043	S		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4016	N	2654	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	7554	E	3315	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1082	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	35.4	2.00
INT-PB	Internal Plasterboard Stud Wall	77.3	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	3.7	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Carpet

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.1	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Hallway	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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) licenced assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-NSDK18-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0204, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	69.5	Suburban
Unconditioned*	5.7	NatHERS climate zone
Total	75.2	56 - Mascot AMO
Garage	0.0	



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

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.

6.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

48.2 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
31.2	17.0
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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2100	2100	Sliding	45	N	None
Bedroom 01	ALM-001-01 A	W02	2100	1500	Awning	30	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*
Bedroom 02	ALM-001-01 A	W01	2100	900	Awning	60	S	None
Kitchen/Living	ALM-002-01 A	W04	2100	3170	Sliding	45	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
None					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2759	N	4539	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3184	S		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3804	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3063	S	7409	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1569	S		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4500	W	2708	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	308	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	61.6	2.00
INT-PB	Internal Plasterboard Stud Wall	41.7	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	5.7	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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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).

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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.

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-H5ZX01-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0205, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 49.6	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 53.5	56 - Mascot AMO
Garage 0.0	



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

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.

6.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

48.3 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
32.7	15.6
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-H5ZX01-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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

Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-b	2700	2254	Sliding	45	W	None
Bedroom 01	ALM-001-01 A	W06-b	2100	2560	Awning	30	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-001-01 A	W01	2700	1500	Awning	30	W	None
Kitchen/Living	ALM-001-01 A	W02	2700	900	Awning	60	W	None
Kitchen/Living	ALM-002-01 A	W04-b	2700	2100	Sliding	45	N	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3560	W	2680	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3302	E	3265	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	7663	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2665	N	3708	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2746	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	29.4	2.00
INT-PB	Internal Plasterboard Stud Wall	23.7	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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

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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-MMX6YV-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0206, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 50.4	Suburban
Unconditioned* 4.3	NatHERS climate zone
Total 54.7	56 - Mascot AMO
Garage 0.0	



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

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.

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



Thermal Performance

Heating	Cooling
14.0	12.8
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-f	2100	2520	Awning	30	N	None
Bedroom 01	ALM-002-01 A	W02-f	2700	2400	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W03-c	2700	2222	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3016	N		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3204	W	2821	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2900	N	3328	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	66.6	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.5	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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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-FV6D97-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0301, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 50.4	Suburban
Unconditioned* 4.3	NatHERS climate zone
Total 54.7	56 - Mascot AMO
Garage 0.0	



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

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.

7.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

30.0 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
16.0	14.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-FV6D97-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-p	2100	2520	Awning	30	N	None
Bedroom 01	ALM-002-01 A	W02-p	2700	2400	Sliding	45	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*
Kitchen/Living	ALM-001-01 A	W03-m	2700	2222	Awning	30	N	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3016	N	356	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3204	E	2821	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	315	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2900	N	3666	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	262	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	67.2	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.5	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-V2DUIL-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0302, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	52.2	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	56.5	56 - Mascot AMO
Garage	0.0	



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

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.

8.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

18.1 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
6.4	11.7
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
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
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-003-01 A	W05-d	2700	889	Casement	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*
Bedroom 01	ALM-001-01 A	W06-c	2100	2560	Awning	30	N	None
Kitchen/Living	ALM-002-01 A	W04-j	2700	2100	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3196	W	2820	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N	364	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2901	N	3666	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	68.5	2.00
INT-PB	Internal Plasterboard Stud Wall	21.2	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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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-ZD6XES-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0303, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	52.2	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	56.5	56 - Mascot AMO
Garage	0.0	



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

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.

8.6
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

19.1 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
6.9	12.2
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-ZD6XES-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
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
None					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-003-01 A	W05-d-a	2700	889	Casement	90	E	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-001-01 A	W06-c-a	2100	2560	Awning	30	N	None
Kitchen/Living	ALM-002-01 A	W04-j-a	2700	2100	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3196	E	2820	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N	368	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2901	N	3670	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	333	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	67.2	2.00
INT-PB	Internal Plasterboard Stud Wall	21.2	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	4.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.9	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.1	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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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.
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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-EJNPSS-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0304, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	72.7	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	76.8	56 - Mascot AMO
Garage	0.0	



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

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

64.6 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
43.5	21.1
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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Certificate Check

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

Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01	2700	1500	Awning	30	E	None
Bedroom 02	ALM-001-01 A	W02	2700	1500	Awning	30	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*
Kitchen/Living	ALM-002-01 A	W05	2700	1200	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W06	2700	2008	Sliding	45	N	None
Kitchen/Living	ALM-001-01 A	W03	2700	900	Awning	60	E	None
Kitchen/Living	ALM-001-01 A	W04	2700	1500	Awning	30	E	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
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	2519	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3599	E	406	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3070	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	E	360	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	2498	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5655	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5729	E	360	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1083	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	35.8	2.00
INT-PB	Internal Plasterboard Stud Wall	53.6	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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.3	N/A	0.00	Tile



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	2	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

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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.
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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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-QHJ80M-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0305, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	80.6	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	84.7	56 - Mascot AMO
Garage	0.0	



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

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.

5.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

53.2 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
33.0	20.2
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-QHJ80M-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W08	2700	2585	Sliding	45	N	None
Bedroom	ALM-001-01 A	W09	2700	2880	Awning	35	E	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 02	ALM-002-01 A	W03	2700	1200	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W07	2700	2100	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom	Hebel-75-REFL-CAV-RND	2740	3429	N	4064	Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	3175	E	2537	Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	1195	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1799	E	3561	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	127	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2519	E	3561	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	247	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	60.5	2.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	16.9	2.00
INT-PB	Internal Plasterboard Stud Wall	67.3	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	4.0	N/A	1.42	Carpet
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	0.00	Carpet
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.4	N/A	1.42	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.5	N/A	1.42	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	0.00	Carpet

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed
WIR	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-VSSC10-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0306, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	69.5	Suburban
Unconditioned*	5.7	NatHERS climate zone
Total	75.2	56 - Mascot AMO
Garage	0.0	



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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6.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

41.4 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
18.8	22.6
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.

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

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

Windows

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

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-n	2100	2100	Sliding	45	N	None
Bedroom 01	ALM-001-01 A	W02-q	2100	1500	Awning	30	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*
Bedroom 02	ALM-001-01 A	W01-q	2100	900	Awning	60	S	None
Kitchen/Living	ALM-002-01 A	W04-h	2100	3170	Sliding	45	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
None					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2759	N	4539	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3184	S		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3804	W	276	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3063	S	7409	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1569	S		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4500	W	3035	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	308	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	61.6	2.00
INT-PB	Internal Plasterboard Stud Wall	41.7	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	5.7	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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).

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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.

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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-FX2CZA-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0307, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	49.6	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	53.5	56 - Mascot AMO
Garage	0.0	



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

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.

6.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

49.8 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
33.1	16.7
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-FX2CZA-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-b-a	2700	2254	Sliding	45	W	None
Bedroom 01	ALM-001-01 A	W06-b-a	2100	2560	Awning	30	N	None

* Refer to glossary.



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-001-01 A	W01-n	2700	1500	Awning	30	W	None
Kitchen/Living	ALM-001-01 A	W02-n	2700	900	Awning	60	W	None
Kitchen/Living	ALM-002-01 A	W04-b-a	2700	2100	Sliding	45	N	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
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3560	W	2933	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N	364	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3302	E	3265	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	7663	W	275	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2665	N	4012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2746	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	29.4	2.00
INT-PB	Internal Plasterboard Stud Wall	23.7	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-PAEB6M-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0308, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 50.4	Suburban
Unconditioned* 4.3	NatHERS climate zone
Total 54.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

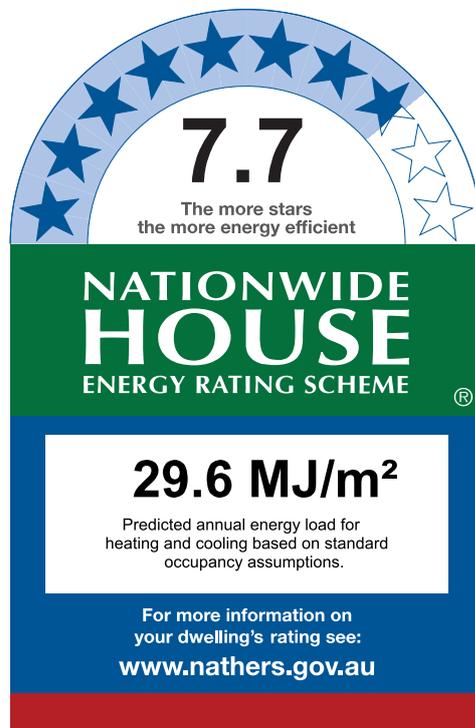
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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



Thermal Performance

Heating	Cooling
17.7	11.9
MJ/m ²	MJ/m ²

About the rating

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* Refer to glossary.

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

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-f-a	2100	2520	Awning	30	N	None
Bedroom 01	ALM-002-01 A	W02-f-a	2700	2400	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W03-c-a	2700	2222	Sliding	45	N	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3016	N	356	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3204	W	2821	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2900	N	3666	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	66.6	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.5	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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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-6ADEAW-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0401, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 50.4	Open
Unconditioned* 4.3	NatHERS climate zone
Total 54.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

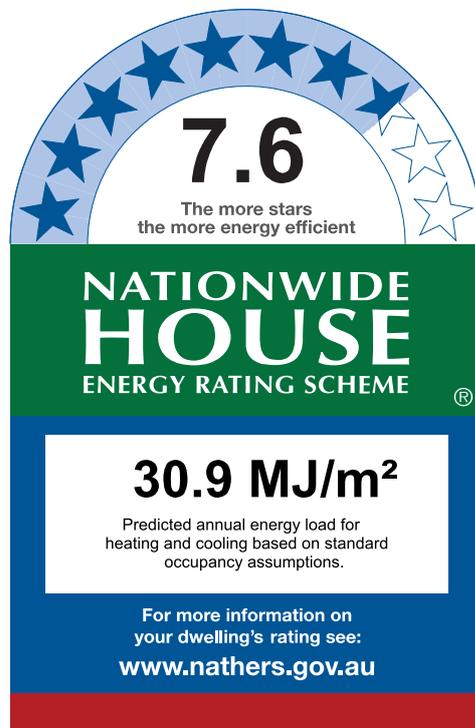
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
19.8	11.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-6ADEAW-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-p-a	2100	2520	Awning	30	N	None
Bedroom 01	ALM-002-01 A	W02-p-a	2700	2400	Sliding	45	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*
Kitchen/Living	ALM-001-01 A	W03-m-a	2700	2222	Awning	30	N	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3016	N	356	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3204	E	2821	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	315	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2900	N	3666	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	262	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	67.2	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.5	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

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Explanatory Notes

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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JIUV8J-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0402, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	52.2	Open
Unconditioned*	4.3	NatHERS climate zone
Total	56.5	56 - Mascot AMO
Garage	0.0	



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

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.

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

8.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

17.8 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
9.6	8.1
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
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
None					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-003-01 A	W05-d-b	2700	889	Casement	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*
Bedroom 01	ALM-001-01 A	W06-c-b	2100	2560	Awning	30	N	None
Kitchen/Living	ALM-002-01 A	W04-j-b	2700	2100	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3196	W	2820	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N	364	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2901	N	3666	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	68.5	2.00
INT-PB	Internal Plasterboard Stud Wall	21.2	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.0	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-GW2UDC-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0403, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	52.2	Open
Unconditioned*	4.3	NatHERS climate zone
Total	56.5	56 - Mascot AMO
Garage	0.0	



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

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.

8.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

18.9 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
10.1	8.8
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-GW2UDC-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
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
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-003-01 A	W05-d-a-a	2700	889	Casement	90	E	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-001-01 A	W06-c-a-a	2100	2560	Awning	30	N	None
Kitchen/Living	ALM-002-01 A	W04-j-a-a	2700	2100	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3196	E	2820	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N	368	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2901	N	3670	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	333	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	67.2	2.00
INT-PB	Internal Plasterboard Stud Wall	21.2	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.9	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.0	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-QJMAG4-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0404, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	72.7	Open
Unconditioned*	4.1	NatHERS climate zone
Total	76.8	56 - Mascot AMO
Garage	0.0	



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

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.

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

7.5
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

31.8 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
13.7	18.1
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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-t	2700	1500	Awning	30	E	None
Bedroom 02	ALM-001-01 A	W02-t	2700	1500	Awning	30	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*
Kitchen/Living	ALM-002-01 A	W05-h	2700	1200	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W06-e	2700	2008	Sliding	45	N	None
Kitchen/Living	ALM-001-01 A	W03-w	2700	900	Awning	60	E	None
Kitchen/Living	ALM-001-01 A	W04-o	2700	1500	Awning	30	E	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
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	2519	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3599	E	406	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3070	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	E	360	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	2498	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5655	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5729	E	360	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1083	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	35.8	2.00
INT-PB	Internal Plasterboard Stud Wall	53.6	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.4	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	2	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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).

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-R9YXH1-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0405, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	80.6	Open
Unconditioned*	4.1	NatHERS climate zone
Total	84.7	56 - Mascot AMO
Garage	0.0	



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

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.

6.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

43.7 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
24.6	19.0
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-R9YXH1-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W08-a	2700	2585	Sliding	45	N	None
Bedroom	ALM-001-01 A	W09-a	2700	2880	Awning	35	E	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 02	ALM-002-01 A	W03-r	2700	1200	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W07-a	2700	2100	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom	Hebel-75-REFL-CAV-RND	2740	3429	N	4064	Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	3175	E	2538	Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	1195	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1799	E	3561	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	127	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2519	E	3561	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	247	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	60.5	2.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	16.9	2.00
INT-PB	Internal Plasterboard Stud Wall	67.3	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	4.1	N/A	0.00	Carpet
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.4	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	0.00	Carpet



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed
WIR	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-ICAKPE-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0406, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	69.5 Open
Unconditioned*	5.7 NatHERS climate zone
Total	75.2 56 - Mascot AMO
Garage	0.0



Accredited assessor

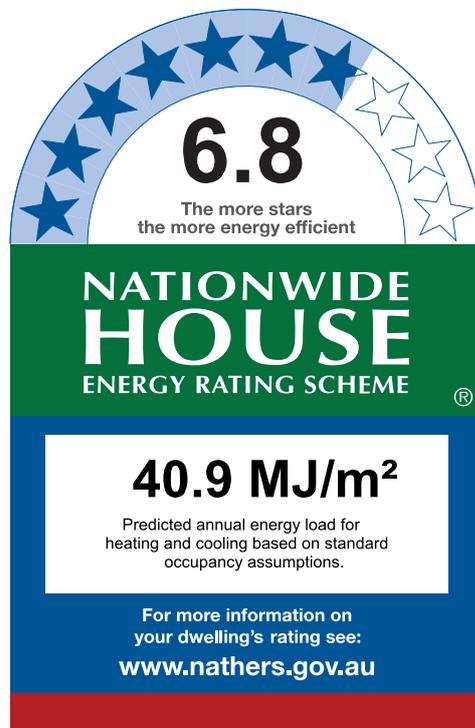
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
22.2	18.7
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-ICAKPE-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-n-a	2100	2100	Sliding	45	N	None
Bedroom 01	ALM-001-01 A	W02-q-a	2100	1500	Awning	30	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*
Bedroom 02	ALM-001-01 A	W01-q-a	2100	900	Awning	60	S	None
Kitchen/Living	ALM-002-01 A	W04-h-a	2100	3170	Sliding	45	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
None					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2759	N	4539	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3184	S		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3804	W	276	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3063	S	7409	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1569	S		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4500	W	3035	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	308	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	61.6	2.00
INT-PB	Internal Plasterboard Stud Wall	41.7	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	5.7	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Australian Capital Territory (ACT) licenced 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-DTWRSG-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0407, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	49.6	Open
Unconditioned*	3.9	NatHERS climate zone
Total	53.5	56 - Mascot AMO
Garage	0.0	



Accredited assessor

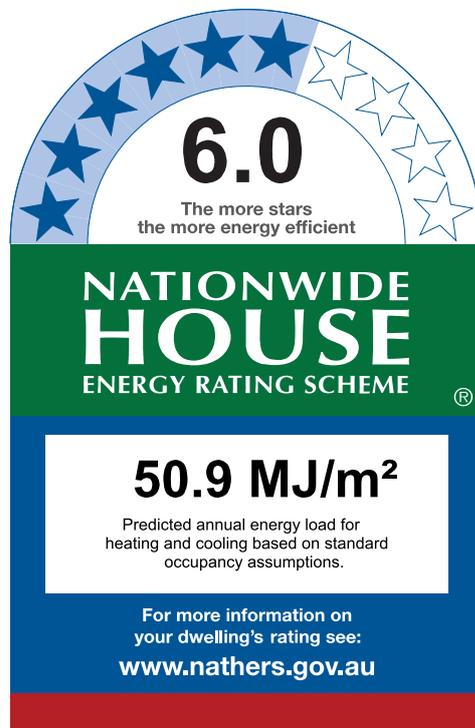
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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.

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



Thermal Performance

Heating	Cooling
37.8	13.1
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-b-a-a	2700	2254	Sliding	45	W	None
Bedroom 01	ALM-001-01 A	W06-b-a-a	2100	2560	Awning	30	N	None

* Refer to glossary.



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-001-01 A	W01-n-a	2700	1500	Awning	30	W	None
Kitchen/Living	ALM-001-01 A	W02-n-a	2700	900	Awning	60	W	None
Kitchen/Living	ALM-002-01 A	W04-b-a-a	2700	2100	Sliding	45	N	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
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3560	W	2933	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N	364	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3302	E	3265	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	7663	W	274	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2665	N	4012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2746	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	29.4	2.00
INT-PB	Internal Plasterboard Stud Wall	23.7	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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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.
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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).

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Nationwide House Energy Rating Scheme NatHERS Certificate No. #HR-OPRWPW-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0408, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	50.4 Open
Unconditioned*	4.3 NatHERS climate zone
Total	54.7 56 - Mascot AMO
Garage	0.0



Accredited assessor

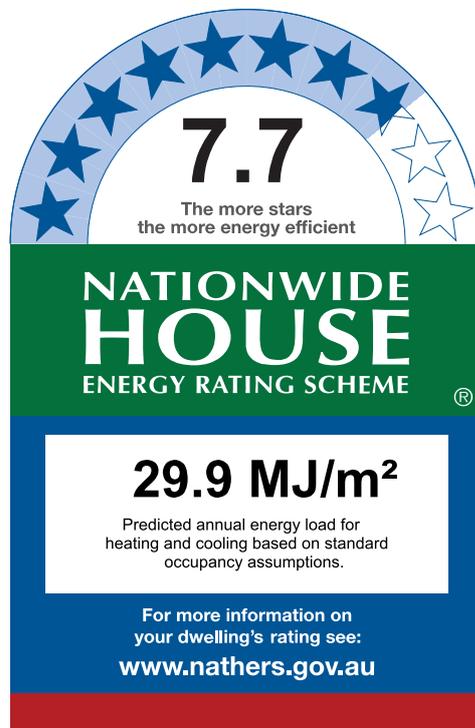
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
21.0	8.9
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-f-a-a	2100	2520	Awning	30	N	None
Bedroom 01	ALM-002-01 A	W02-f-a-a	2700	2400	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W03-c-a-a	2700	2222	Sliding	45	N	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3016	N	356	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3204	W	2821	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2900	N	3666	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	66.6	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.5	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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-71PPQJ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0501, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 48.5	Open
Unconditioned* 4.0	NatHERS climate zone
Total 52.5	56 - Mascot AMO
Garage 0.0	



Accredited assessor

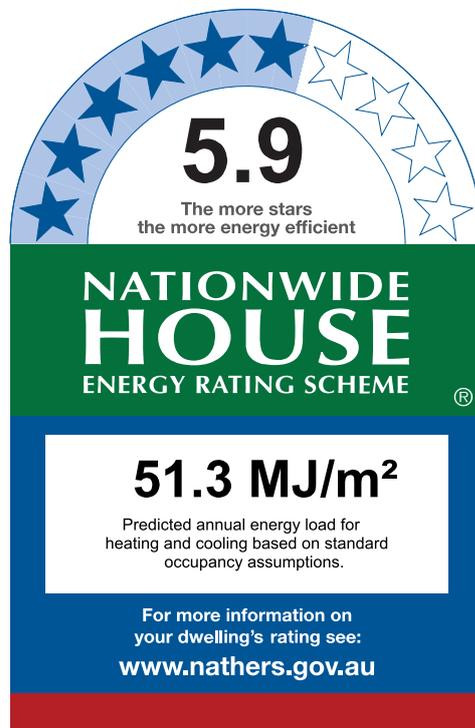
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
28.6	22.6
MJ/m ²	MJ/m ²

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	2340	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	2700	Sliding	45	N	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 09	0	614	1461	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND	2740	3599	N	219	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3937	N	219	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	296	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	317	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	91.9	2.00

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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.0	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

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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-YQDCV8-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0502, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	97.7	Open
Unconditioned*	4.3	NatHERS climate zone
Total	102.0	56 - Mascot AMO
Garage	0.0	



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

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.

7.0
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

38.7 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
13.3	25.4
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-YQDCV8-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W06	2700	2400	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	1355	Sliding	45	N	None
Bedroom 03	ALM-002-01 A	W01	2700	2265	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W03	2700	3218	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W04	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W05	2700	1008	Sliding	45	E	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 08	0	614	1499	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	3303	E	677	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	3006	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	1651	N	219	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND-A	2740	3006	N	219	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	4001	N	219	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	8044	E	677	Yes
WIR	Hebel-75-REFL-CAV-RND-A	2740	2159	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	148.4	2.00

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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.1	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.1	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
WIR	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
WIR	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	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

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.
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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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-UEGHBQ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0503, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	80.6	Open
Unconditioned*	4.1	NatHERS climate zone
Total	84.7	56 - Mascot AMO
Garage	0.0	



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

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.

5.6
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

56.5 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
37.1	19.4
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

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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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W08-a-a	2700	2585	Sliding	45	N	None
Bedroom	ALM-001-01 A	W09-a-a	2700	2880	Awning	35	E	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 02	ALM-002-01 A	W03-r-a	2700	1200	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W07-a-a	2700	2100	Sliding	45	E	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 07	0	593	1503	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND-A	2740	3429	N	4064	Yes
Bedroom	Hebel-75-REFL-CAV-RND-A	2740	3175	E	2538	Yes
Bedroom	Hebel-75-REFL-CAV-RND-A	2740	1195	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-A	2740	1799	E	3561	Yes
Hallway	Hebel-75-REFL-CAV-RND-B	2740	381	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	127	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	2519	E	3561	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	247	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.3	2.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	16.9	2.00
INT-PB	Internal Plasterboard Stud Wall	67.3	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	4.1	N/A	0.00	Tile
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.4	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	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	0.00	No
Bedroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
WIR	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed
WIR	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-J3VKRO-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0504, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	71.3	Open
Unconditioned*	5.7	NatHERS climate zone
Total	77.0	56 - Mascot AMO
Garage	0.0	



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

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.

5.9
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

51.0 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
37.9	13.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-J3VKRO-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-n-a-a	2100	2100	Sliding	45	N	None
Bedroom 01	ALM-001-01 A	W02-q-a-a	2100	1500	Awning	30	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*
Bedroom 02	ALM-001-01 A	W01-q-a-a	2100	900	Awning	60	S	None
Kitchen/Living	ALM-002-01 A	W04-h-a-a	2100	3170	Sliding	45	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 12	0	593	1503	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2759	N	4539	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3184	S		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3804	W	276	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3626	S	7416	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1569	S		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4500	W	3035	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	357	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.9	2.00
INT-PB	Internal Plasterboard Stud Wall	43.2	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	5.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-DIYBLR-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address 0505, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 48.6	Open
Unconditioned* 3.9	NatHERS climate zone
Total 52.5	56 - Mascot AMO
Garage 0.0	



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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5.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

59.5 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
42.6	16.9
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04	2700	2400	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	3000	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1500	Awning	30	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*
Kitchen/Living	ALM-002-01 A	W02	2700	900	Awning	60	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 11	0	614	1482	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	3006	N	219	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3598	N	219	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	8044	W	236	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	2747	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	62.4	2.00

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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.2	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-WB18MP-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address A0506, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	64.8	Open
Unconditioned*	4.0	NatHERS climate zone
Total	68.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

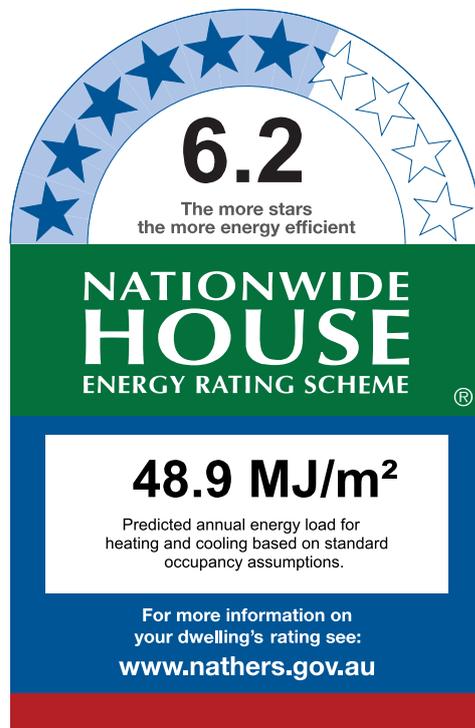
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
30.4	18.6
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-WB18MP-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	900	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W02	2700	2400	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	3000	Sliding	45	N	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 10	0	614	1503	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND	2740	1821	N	219	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2985	N	219	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4297	N	219	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	118.5	2.00

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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.8	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.1	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

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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.
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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-XZCTFX-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address B0101, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	60.1	Suburban
Unconditioned*	4.4	NatHERS climate zone
Total	64.5	56 - Mascot AMO
Garage	0.0	



Accredited assessor

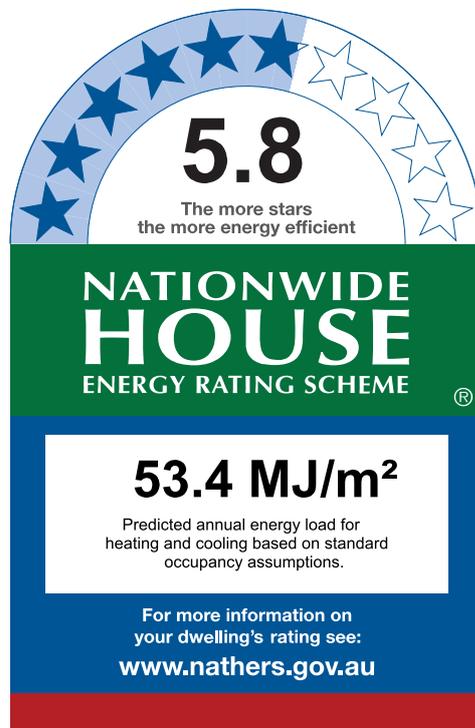
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
35.9	17.5
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-XZCTFX-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-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
None					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-003-01 A	W02	2700	2115	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W01	2700	2815	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	303	E		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	314	S		Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	16	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2985	W	2026	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3598	W	2026	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2578	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	113.3	2.00

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	4.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.2	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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

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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

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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JZRXHN-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0102, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 108.1	Suburban
Unconditioned* 3.6	NatHERS climate zone
Total 111.7	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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5.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

57.0 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
34.6	22.4
MJ/m ²	MJ/m ²

About the rating

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Windows

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

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

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W06	2700	2550	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W05	2700	2575	Sliding	45	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*
Bedroom 03	ALM-002-01 A	W04	2700	1010	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-001-01 A	W01	600	900	Awning	90	S	None
Kitchen/Living	ALM-002-01 A	W03	2700	3140	Sliding	45	N	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
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	2893	E		Yes
Bedroom 01	BV-REFL-CAV	2740	2405	S	5601	Yes
Bedroom 01	BV-REFL-CAV	2740	3771	N		Yes
Bedroom 02	BV-REFL-CAV	2740	96	W		Yes
Bedroom 02	BV-REFL-CAV	2740	101	S		Yes
Bedroom 02	BV-REFL-CAV	2740	3214	E	2800	Yes
Bedroom 02	BV-REFL-CAV	2740	2985	S	2274	Yes
Bedroom 03	BV-REFL-CAV	2740	1816	E	5886	Yes
Bedroom 03	BV-REFL-CAV	2740	94	E		Yes
Hallway	BV-REFL-CAV	2740	363	N		Yes
Kitchen/Living	BV-REFL-CAV	2740	3980	E		Yes
Kitchen/Living	BV-REFL-CAV	2740	4874	S		Yes
Kitchen/Living	BV-REFL-CAV	2740	5496	N	5241	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	69.8	2.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	5.0	2.00
INT-PB	Internal Plasterboard Stud Wall	100.1	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	3.9	N/A	1.42	Tile

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.4	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	1.42	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.7	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.2	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	1.42	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Laundry	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Glossary

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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-BPLRIL-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0103, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 59.2	Suburban
Unconditioned* 5.1	NatHERS climate zone
Total 64.3	56 - Mascot AMO
Garage 0.0	



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

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.

5.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

56.6 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
35.2	21.4
MJ/m ²	MJ/m ²

About the rating

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Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-BPLRIL-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	3135	Sliding	66	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	3125	Sliding	66	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	4188	E	2340	Yes
Kitchen/Living	BV-REFL-CAV	2740	3984	E	2332	Yes

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	65.2	2.00
INT-PB	Internal Plasterboard Stud Wall	35.2	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	5.1	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.1	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.6	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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 .
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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-79B8KS-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0104, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	80.5	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	84.4	56 - Mascot AMO
Garage	0.0	



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

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.

5.8
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

54.0 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
44.2	9.8
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W03	2700	1975	Sliding	45	W	None
Bedroom 02	ALM-001-03 A	W04	600	1092	Awning	90	S	None

* Refer to glossary.



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-004-01 A	W01	2700	1995	Sliding	45	W	None
Kitchen/Living	ALM-004-01 A	W02	2700	3000	Sliding	45	W	None
Study	ALM-001-03 A	W05	2700	1153	Awning	60	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV-A	Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	2.50	Yes
BV-REFL-CAV-B	Brick Veneer Stud Wall with Reflective Sarking	0.32	Light (Surfmist)	2.00	Yes
BV-REFL-CAV-C	Brick Veneer Stud Wall with Reflective Sarking	0.32	Light (Surfmist)	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	BV-REFL-CAV-A	2740	2482	S		Yes
Bedroom 01	BV-REFL-CAV-A	2740	1155	N	15439	Yes
Bedroom 01	BV-REFL-CAV-A	2740	3003	W	2721	Yes
Bedroom 01	BV-REFL-CAV-C	2740	3112	N		Yes
Bedroom 02	BV-REFL-CAV-A	2740	3570	S		Yes
Bedroom 02	BV-REFL-CAV-A	2740	3026	W	2728	Yes
EEnsuite	BV-REFL-CAV-B	2740	1632	N		Yes
Kitchen/Living	BV-REFL-CAV-A	2740	3982	W	2728	Yes
Study	BV-REFL-CAV-A	2740	3034	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	35.1	2.00
INT-PB	Internal Plasterboard Stud Wall	61.7	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	3.9	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	1.42	Carpet
EEnsuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	1.42	Carpet

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.8	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.1	N/A	1.42	Tile
Vestibule	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
EEnsuite	1	Downlight	100	Sealed
EEnsuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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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-VX79VW-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address B0105, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	72.3	Suburban
Unconditioned*	5.2	NatHERS climate zone
Total	77.5	56 - Mascot AMO
Garage	0.0	



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

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.

6.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

46.8 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
30.1	16.7
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-VX79VW-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-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
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-003-01 A	W03	2700	845	Sliding	45	E	None
Bedroom 02	ALM-003-01 A	W02	2700	2350	Sliding	45	E	None
Kitchen/Living	ALM-003-01 A	W01	2700	3175	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	148	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	932	E	6176	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	465	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	254	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	E	2746	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3472	S	1265	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2746	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	127.8	2.00

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	5.2	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.3	N/A	0.96	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.96	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.96	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.3	N/A	0.96	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.96	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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

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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-G1NXAH-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address B0106, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	78.6	Suburban
Unconditioned*	4.5	NatHERS climate zone
Total	83.1	56 - Mascot AMO
Garage	0.0	



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

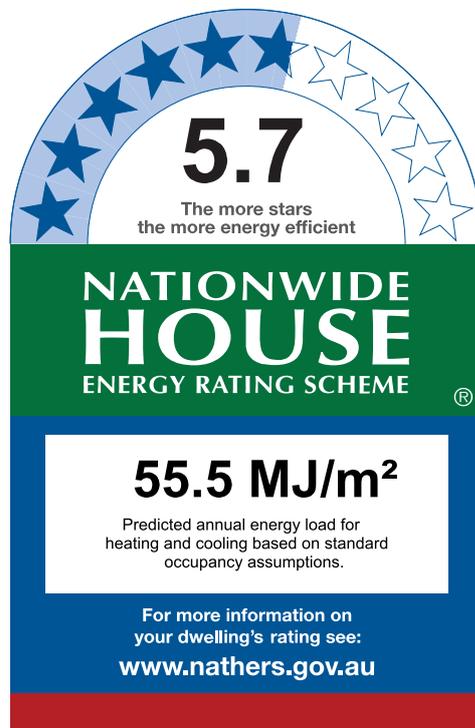
Declaration of interest No Conflict of Interest

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
44.2	11.3
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-G1NXAH-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-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
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-003-01 A	W03	2700	2265	Sliding	45	W	None
Bedroom 02	ALM-003-01 A	W02	2700	2605	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W01	2700	2900	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	3911	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2562	N	3085	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	W	1349	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2541	S	3254	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3197	W	3890	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8404	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	102.9	2.00

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	4.5	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.96	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.96	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.96	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.7	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.8	N/A	0.96	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.96	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.2	N/A	0.96	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-BTCTAJ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0201, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	50.6	Suburban
Unconditioned*	5.7	NatHERS climate zone
Total	56.3	56 - Mascot AMO
Garage	0.0	



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

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

63.8 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
44.4	19.4
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-BTCTAJ-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-002-01 A	W01	2100	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03	2100	2270	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2100	2290	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3037	W	3012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3002	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3555	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2997	S	3064	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.8	2.00
INT-PB	Internal Plasterboard Stud Wall	39.7	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	5.7	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	1.42	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.4	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	20.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Entry	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	3	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JRIH84-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0202, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	82.3	Suburban
Unconditioned*	2.5	NatHERS climate zone
Total	84.8	56 - Mascot AMO
Garage	0.0	



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

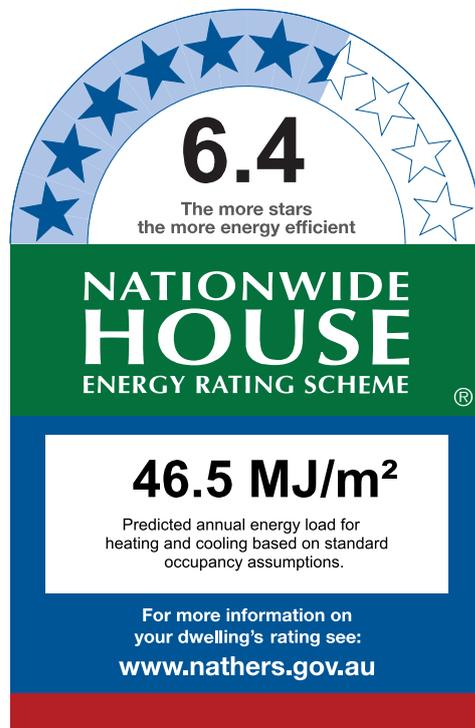
Declaration of interest No Conflict of Interest

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
30.7	15.8
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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

Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	2400	Sliding	45	W	None
Bedroom 02	ALM-001-01 A	W03	2700	900	Awning	60	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02	2700	2400	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
EMPTY-WALL	Empty Wall	0.50	Medium	0.00	No
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3002	W	3061	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2037	S	7412	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	331	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3995	W	3065	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	330	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	291	E		Yes
Kitchen/Living	EMPTY-WALL	2740	270	N		No
Storage	EMPTY-WALL	2740	1676	E		No
Study	Hebel-75-REFL-CAV-RND	2740	310	N		Yes
Study	Hebel-75-REFL-CAV-RND	2740	310	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	80.5	2.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.5	2.00
INT-PB	Internal Plasterboard Stud Wall	69.5	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	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.7	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.9	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	1.42	Tile

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Storage	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Storage	1	Downlight	100	Sealed
Storage	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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



Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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.
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Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-0C2UDN-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0203, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	110.3	Suburban
Unconditioned*	1.9	NatHERS climate zone
Total	112.2	56 - Mascot AMO
Garage	0.0	



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

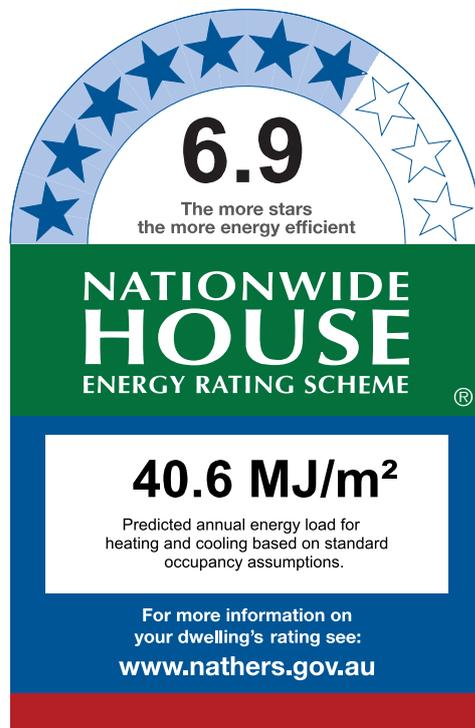
Declaration of interest No Conflict of Interest

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
20.8	19.7
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-0C2UDN-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05	2700	2530	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01	2700	1200	Awning	60	E	None
Bedroom 03	ALM-002-01 A	W04	2700	900	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	3180	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
EMPTY-WALL-A	Empty Wall	0.50	Medium	0.00	No

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
EMPTY-WALL-B	Empty Wall	0.32	Light (Surfmist)	0.00	No
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	EMPTY-WALL-B	2740	7921	N		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3008	E	3731	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3147	S	1732	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3011	E	319	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2202	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	1703	E	6980	Yes
Ensuite	EMPTY-WALL-A	2740	448	N		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4012	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	201	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	308	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6466	N	4766	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	58.1	2.00
INT-PB	Internal Plasterboard Stud Wall	86.9	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.0	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	N/A	1.42	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.



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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-VLWLHC-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0204, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	83.6	Suburban
Unconditioned*	2.6	NatHERS climate zone
Total	86.2	56 - Mascot AMO
Garage	0.0	



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

National Construction Code (NCC) requirements

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6.0
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

50.5 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
29.9	20.5
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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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?

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	ALM-002-01 A	W04-c	2700	1010	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02-h	2700	2400	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W03-e	2700	3140	Sliding	45	N	None
Kitchen/Living	ALM-001-01 A	W01-h	600	900	Awning	90	S	None
Living 2	ALM-002-01 A	W04	2700	2585	Sliding	45	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	1910	E	5921	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3980	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5496	N	4947	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5312	S	4298	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	3006	S	2294	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	2985	E	2819	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	308	N		Yes
Study	Hebel-75-REFL-CAV-RND	2740	306	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	68.0	2.00
INT-PB	Internal Plasterboard Stud Wall	71.3	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	5.0	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Tile
Living 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.1	N/A	0.00	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Tile

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 03	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Living 2	3	Downlight	200	Sealed
Pantry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed
Study	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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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

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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-GS2WWA-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0205, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	77.0	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	80.9	56 - Mascot AMO
Garage	0.0	



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

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.

7.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

36.9 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
21.5	15.3
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-GS2WWA-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1095	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01	2700	1800	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03	2700	3130	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1545	W	386	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3048	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1948	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	E	2799	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	99.7	2.00
INT-PB	Internal Plasterboard Stud Wall	56.0	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.9	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-ACICVA-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0206, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 49.9	Suburban
Unconditioned* 5.6	NatHERS climate zone
Total 55.5	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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

5.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

51.1 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
38.3	12.8
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-ACICVA-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1970	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2100	2225	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2400	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W04	600	1200	Awning	90	S	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	314	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W	3012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3006	N	3043	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2498	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.5	2.00
INT-PB	Internal Plasterboard Stud Wall	24.1	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	5.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.4	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-Y3UWJS-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0301, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	50.6	Suburban
Unconditioned*	5.7	NatHERS climate zone
Total	56.3	56 - Mascot AMO
Garage	0.0	



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

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.

5.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

53.1 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
24.8	28.3
MJ/m ²	MJ/m ²

About the rating

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

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-002-01 A	W01-s	2100	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-p	2100	2270	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-s	2100	2290	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3037	W	3012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3002	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3555	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2997	S	3064	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.8	2.00
INT-PB	Internal Plasterboard Stud Wall	39.7	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	5.0	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	1.42	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	20.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.6	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Entry	1	Exhaust Fan	350	Sealed
Kitchen/Living	3	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-YU11AL-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0302, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	82.3	Suburban
Unconditioned*	2.5	NatHERS climate zone
Total	84.8	56 - Mascot AMO
Garage	0.0	



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

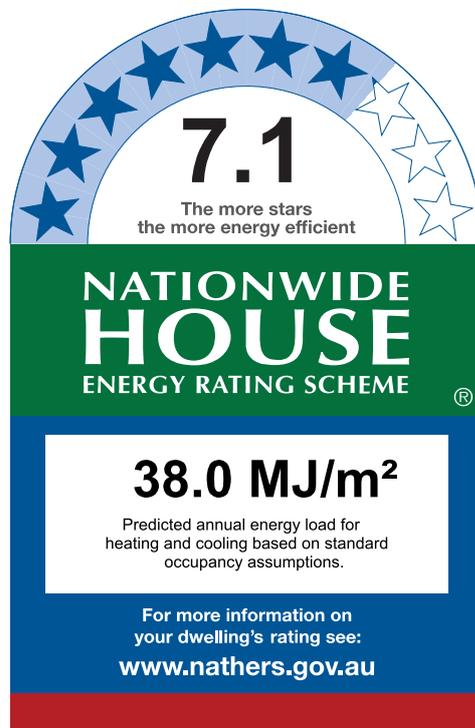
Declaration of interest No Conflict of Interest

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
21.7	16.3
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-YU11AL-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-l	2700	2400	Sliding	45	W	None
Bedroom 02	ALM-001-01 A	W03-k	2700	900	Awning	60	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02-I	2700	2400	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3002	W	3061	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2037	S	7412	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	331	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3995	W	3065	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	330	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	291	E		Yes
Study	Hebel-75-REFL-CAV-RND	2740	310	N		Yes
Study	Hebel-75-REFL-CAV-RND	2740	310	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	85.6	2.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.5	2.00
INT-PB	Internal Plasterboard Stud Wall	69.5	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	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.7	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.9	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	1.42	Tile
Storage	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Storage	1	Downlight	100	Sealed
Storage	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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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

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Australian Capital Territory (ACT) licenced 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

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).

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-YJHI37-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0303, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	110.3	Suburban
Unconditioned*	1.9	NatHERS climate zone
Total	112.2	56 - Mascot AMO
Garage	0.0	



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

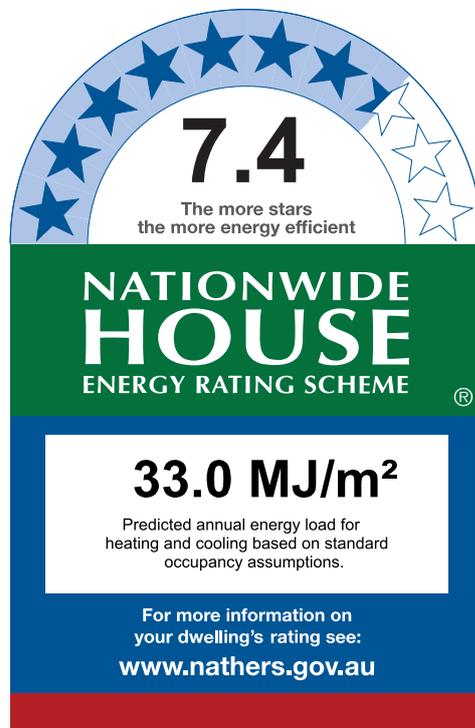
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Thermal Performance

Heating	Cooling
15.5	17.6
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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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.

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

Provisional* values

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-e	2700	2530	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-w	2700	1200	Awning	60	E	None
Bedroom 03	ALM-002-01 A	W04-l	2700	900	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02-w	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-u	2700	3180	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3008	E	3732	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3147	S	1732	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3011	E	319	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2202	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	1703	E	6981	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4012	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	201	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	308	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6466	N	4766	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	80.3	2.00
INT-PB	Internal Plasterboard Stud Wall	86.9	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.0	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	N/A	1.42	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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



Explanatory Notes

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Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-ZWSNJD-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0304, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	83.6	Suburban
Unconditioned*	2.6	NatHERS climate zone
Total	86.2	56 - Mascot AMO
Garage	0.0	



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

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.

5.8
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

53.8 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
35.4	18.4
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-ZWSNJD-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	ALM-002-01 A	W04-c-a	2700	1010	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02-h-a	2700	2400	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W03-e-a	2700	3140	Sliding	45	N	None
Kitchen/Living	ALM-001-01 A	W01-h-a	600	900	Awning	90	S	None
Living 2	ALM-002-01 A	W04-f	2700	2585	Sliding	45	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	1910	E	5921	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3980	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5496	N	4947	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5312	S	4298	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	3006	S	2294	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	2985	E	2819	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	308	N		Yes
Study	Hebel-75-REFL-CAV-RND	2740	306	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	68.0	2.00
INT-PB	Internal Plasterboard Stud Wall	71.3	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	5.0	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Tile
Living 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.2	N/A	0.00	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Tile

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 03	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Living 2	3	Downlight	200	Sealed
Pantry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed
Study	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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) licenced 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

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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-9ZNQNH-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0305, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	77.0	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	80.9	56 - Mascot AMO
Garage	0.0	



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

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.

7.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

34.8 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
16.4	18.4
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-9ZNQNH-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-u	2700	1095	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-u	2700	1800	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-s	2700	3130	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1545	W	386	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3048	W	322	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1948	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	E	2799	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	100.0	2.00
INT-PB	Internal Plasterboard Stud Wall	56.0	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	TIMB-001: Suspended Timber Floor	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.7	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Australian Capital Territory (ACT) licenced 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

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).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-TGGTRK-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0306, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	49.9	Suburban
Unconditioned*	5.6	NatHERS climate zone
Total	55.5	56 - Mascot AMO
Garage	0.0	



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

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.

6.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

40.5 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
24.9	15.6
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-TGGTRK-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-o	2700	1970	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01-r	2100	2225	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-r	2700	2400	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W04-i	600	1200	Awning	90	S	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	314	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W	3012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3006	N	3043	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2498	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.5	2.00
INT-PB	Internal Plasterboard Stud Wall	24.1	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	5.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme NatHERS Certificate No. #HR-WQBFSH-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0401, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	50.6 Open
Unconditioned*	5.7 NatHERS climate zone
Total	56.3 56 - Mascot AMO
Garage	0.0



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

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.

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6.0
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

50.5 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
25.5	25.0
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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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.

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

Provisional* values

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-002-01 A	W01-s-a	2100	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-p-a	2100	2270	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-s-a	2100	2290	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3037	W	3012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3002	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3555	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2997	S	3064	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.8	2.00
INT-PB	Internal Plasterboard Stud Wall	39.7	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	5.0	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	1.42	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	20.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.6	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Entry	1	Exhaust Fan	350	Sealed
Kitchen/Living	3	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

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Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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Exposure category - 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.
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Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-WZ2KG4-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0402, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	82.3	Open
Unconditioned*	2.5	NatHERS climate zone
Total	84.8	56 - Mascot AMO
Garage	0.0	



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

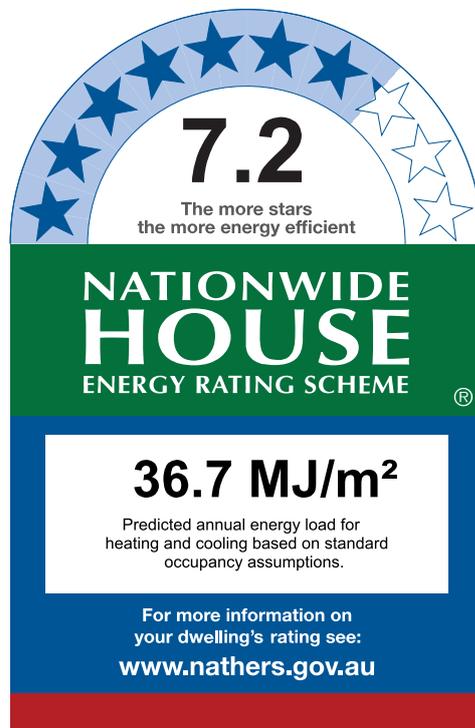
Declaration of interest No Conflict of Interest

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
23.8	12.9
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-WZ2KG4-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-l-a	2700	2400	Sliding	45	W	None
Bedroom 02	ALM-001-01 A	W03-k-a	2700	900	Awning	60	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02-I-a	2700	2400	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3002	W	3061	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2037	S	7412	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	331	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3995	W	3065	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	330	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	291	E		Yes
Study	Hebel-75-REFL-CAV-RND	2740	310	N		Yes
Study	Hebel-75-REFL-CAV-RND	2740	310	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	85.6	2.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.5	2.00
INT-PB	Internal Plasterboard Stud Wall	69.5	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	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.7	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.9	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	1.42	Tile
Storage	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Storage	1	Downlight	100	Sealed
Storage	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5ST2MQ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0403, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	110.3 Open
Unconditioned*	1.9 NatHERS climate zone
Total	112.2 56 - Mascot AMO
Garage	0.0



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

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.

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

7.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

31.9 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
18.9	13.0
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.

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

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-e-a	2700	2530	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-w-a	2700	1200	Awning	60	E	None
Bedroom 03	ALM-002-01 A	W04-l-a	2700	900	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02-w-a	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-u-a	2700	3180	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3008	E	3732	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3147	S	1732	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3011	E	319	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2202	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	1703	E	6982	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4012	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	201	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	308	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6466	N	4766	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	80.3	2.00
INT-PB	Internal Plasterboard Stud Wall	86.9	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.0	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	N/A	1.42	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-AMAI4O-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0404, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	83.6	Open
Unconditioned*	2.6	NatHERS climate zone
Total	86.2	56 - Mascot AMO
Garage	0.0	



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

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.

5.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

56.3 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
40.9	15.5
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-AMAI4O-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	ALM-002-01 A	W04-c-a-a	2700	1010	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02-h-a-a	2700	2400	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W03-e-a-a	2700	3140	Sliding	45	N	None
Kitchen/Living	ALM-001-01 A	W01-h-a-a	600	900	Awning	90	S	None
Living 2	ALM-002-01 A	W04-f-a	2700	2585	Sliding	45	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	1910	E	5921	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3980	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5496	N	4947	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5312	S	4298	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	3006	S	2294	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	2985	E	2819	Yes
Living 2	Hebel-75-REFL-CAV-RND	2740	308	N		Yes
Study	Hebel-75-REFL-CAV-RND	2740	306	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	68.0	2.00
INT-PB	Internal Plasterboard Stud Wall	71.3	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	5.0	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Tile
Living 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.2	N/A	0.00	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 03	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Living 2	3	Downlight	200	Sealed
Pantry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed
Study	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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.
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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.
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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-1S0397-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0405, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	77.0	Open
Unconditioned*	3.9	NatHERS climate zone
Total	80.9	56 - Mascot AMO
Garage	0.0	



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

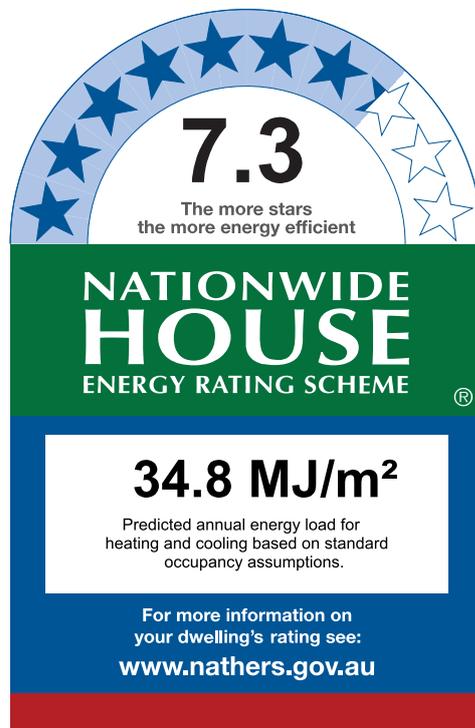
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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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
19.9	14.9
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-1S0397-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-u-a	2700	1095	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-u-a	2700	1800	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-s-a	2700	3130	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1545	W	386	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3048	W	322	Yes

* Refer to glossary.



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1948	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	E	2799	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	100.0	2.00
INT-PB	Internal Plasterboard Stud Wall	56.0	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	TIMB-001: Suspended Timber Floor	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.7	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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) licenced 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

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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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-Z69FBN-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0406, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	49.9	Open
Unconditioned*	5.6	NatHERS climate zone
Total	55.5	56 - Mascot AMO
Garage	0.0	



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

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.

7.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

35.0 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
22.4	12.6
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-Z69FBN-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-o-a	2700	1970	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01-r-a	2100	2225	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-r-a	2700	2400	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W04-i-a	600	1200	Awning	90	S	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	314	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W	3012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3006	N	3043	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2498	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.5	2.00
INT-PB	Internal Plasterboard Stud Wall	24.1	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	5.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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.
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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-N9UXQX-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0501, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	50.6	Open
Unconditioned*	5.7	NatHERS climate zone
Total	56.3	56 - Mascot AMO
Garage	0.0	



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

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.

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

4.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

69.6 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
45.3	24.3
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-N9UXQX-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-002-01 A	W01-s-a-a	2100	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-p-a-a	2100	2270	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-s-a-a	2100	2290	Sliding	45	S	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 13	0	593	1503	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3037	W	3012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3002	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3555	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2997	S	3064	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.8	2.00
INT-PB	Internal Plasterboard Stud Wall	39.7	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	5.0	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	1.42	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	20.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.6	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Entry	1	Exhaust Fan	350	Sealed
Kitchen/Living	3	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-6UJOR5-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0502, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	80.4	Open
Unconditioned*	2.5	NatHERS climate zone
Total	82.9	56 - Mascot AMO
Garage	0.0	



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

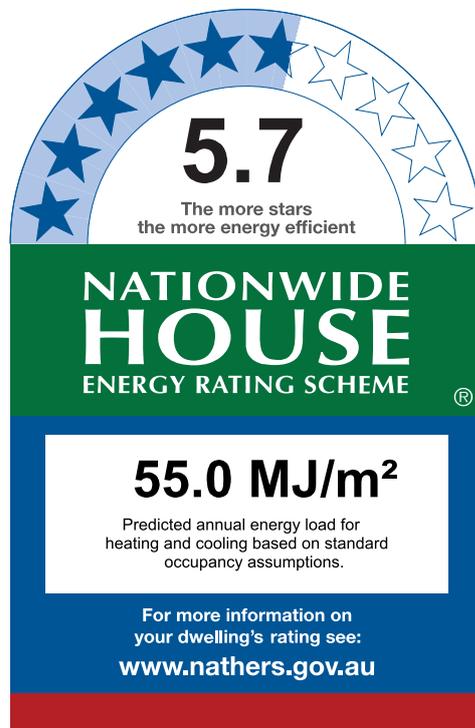
Declaration of interest No Conflict of Interest

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
43.0	12.0
MJ/m ²	MJ/m ²

About the rating

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

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

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

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-l-a-a	2700	2400	Sliding	45	W	None
Bedroom 02	ALM-001-01 A	W03-k-a-a	2700	900	Awning	60	S	None

* Refer to glossary.



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02-l-a-a	2700	2400	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3002	W	3061	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1425	S	7412	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	331	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3995	W	3065	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	330	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	291	E		Yes
Study	Hebel-75-REFL-CAV-RND	2740	310	N		Yes
Study	Hebel-75-REFL-CAV-RND	2740	310	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	83.9	2.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.5	2.00
INT-PB	Internal Plasterboard Stud Wall	69.5	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	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.7	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.9	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	1.42	Tile
Storage	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Storage	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Storage	1	Downlight	100	Sealed
Storage	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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-BCTAX6-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0503, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	110.3	Open
Unconditioned*	1.9	NatHERS climate zone
Total	112.2	56 - Mascot AMO
Garage	0.0	



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

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.

6.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

45.3 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
30.0	15.2
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-BCTAX6-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-e-a-a	2700	2530	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-w-a-a	2700	1200	Awning	60	E	None
Bedroom 03	ALM-002-01 A	W04-l-a-a	2700	900	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02-w-a-a	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-u-a-a	2700	3180	Sliding	45	N	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 06	0	614	1503	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3008	E	3732	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3147	S	1732	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3011	E	319	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2202	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	1703	E	6982	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4012	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	201	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	308	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6466	N	4766	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	80.3	2.00
INT-PB	Internal Plasterboard Stud Wall	86.9	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.0	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	1.42	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	N/A	1.42	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	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.
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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).
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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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.
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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-PDB7Z0-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0504, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	83.6	Open
Unconditioned*	2.6	NatHERS climate zone
Total	86.2	56 - Mascot AMO
Garage	0.0	



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

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.

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5.7
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

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

For more information on
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Thermal Performance

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MJ/m ²	MJ/m ²

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* Refer to glossary.

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

Ceiling penetrations*

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

Windows

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

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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	ALM-004-01 A	W04-c-a-a-a	2700	1010	Sliding	45	E	None
Kitchen/Living	ALM-004-01 A	W02-h-a-a-a	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-004-01 A	W03-e-a-a-a	2700	3140	Sliding	45	N	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*
Kitchen/Living	ALM-004-01 A	W01-h-a-a-a	600	900	Awning	90	S	None
Living 2	ALM-004-01 A	W04-f-a-a	2700	2585	Sliding	45	E	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 05	0	614	1503	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 03	Hebel-75-REFL-CAV-RND-A	2740	1910	E	5899	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3980	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	5496	N	4925	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	5312	S	4276	Yes
Living 2	Hebel-75-REFL-CAV-RND-A	2740	3006	S	2272	Yes
Living 2	Hebel-75-REFL-CAV-RND-A	2740	2985	E	2797	Yes
Living 2	Hebel-75-REFL-CAV-RND-B	2740	308	N		Yes
Study	Hebel-75-REFL-CAV-RND-B	2740	306	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	68.0	2.00
INT-PB	Internal Plasterboard Stud Wall	71.3	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	5.0	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Tile
Living 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.2	N/A	0.00	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Tile

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Living 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 03	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Living 2	3	Downlight	200	Sealed
Pantry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed
Study	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

* Refer to glossary.



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

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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-2LASXT-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0505, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	77.0	Open
Unconditioned*	3.9	NatHERS climate zone
Total	80.9	56 - Mascot AMO
Garage	0.0	



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

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.

6.0
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

50.7 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
36.0	14.7
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-2LASXT-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-u-a-a	2700	1095	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-u-a-a	2700	1800	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-s-a-a	2700	3130	Sliding	45	E	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 04	0	614	1503	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1545	W	386	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3048	W	322	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1948	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	E	2799	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	100.0	2.00
INT-PB	Internal Plasterboard Stud Wall	56.0	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	TIMB-001: Suspended Timber Floor	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-79E6DM-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address B0506, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	49.9	Open
Unconditioned*	5.6	NatHERS climate zone
Total	55.5	56 - Mascot AMO
Garage	0.0	



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

National Construction Code (NCC) requirements

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

5.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

54.2 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
42.0	12.3
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

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

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-o-a-a	2700	1970	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01-r-a-a	2100	2225	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-r-a-a	2700	2400	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W04-i-a-a	600	1200	Awning	90	S	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 14	0	593	1503	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	314	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W	3012	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3006	N	3043	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2498	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.5	2.00
INT-PB	Internal Plasterboard Stud Wall	24.1	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	5.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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-I1WFBR-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0101, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 96.8	Suburban
Unconditioned* 5.5	NatHERS climate zone
Total 102.3	56 - Mascot AMO
Garage 0.0	



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

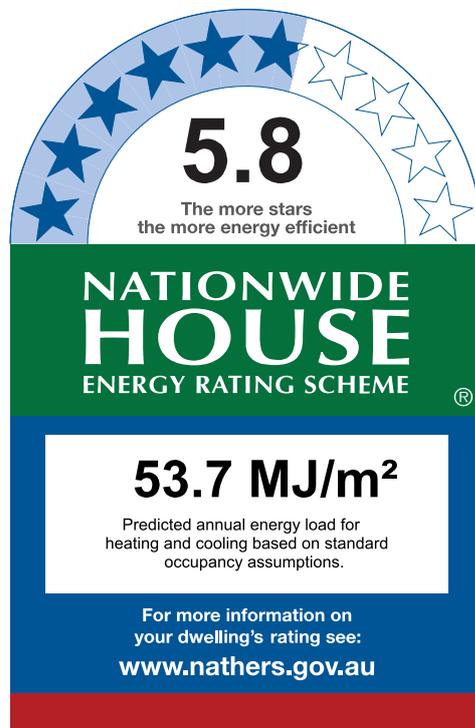
Declaration of interest No Conflict of Interest

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
43.5	10.2
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-I1WFBR-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
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
None					

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W06	600	1088	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-001-01 A	W02	600	1107	Awning	90	N	None
Bedroom 02	ALM-002-03 A	W01	2700	1800	Sliding	45	W	None
Bedroom 03	ALM-002-03 A	W05	2700	2240	Sliding	45	W	None
Kitchen/Living	ALM-002-03 A	W04	2700	2880	Sliding	45	W	None
Study	ALM-001-01 A	W03	2700	1200	Awning	60	N	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	1395	W	5782	Yes
Bedroom 02	BV-REFL-CAV	2740	3417	N		Yes
Bedroom 02	BV-REFL-CAV	2740	3249	W	2710	Yes
Bedroom 03	BV-REFL-CAV	2740	2988	S	1996	Yes
Bedroom 03	BV-REFL-CAV	2740	3555	W	2725	Yes
Kitchen/Living	BV-REFL-CAV	2740	3999	W	2702	Yes
Study	BV-REFL-CAV	2740	2283	N		Yes
WIR	BV-REFL-CAV	2740	3402	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	47.5	2.00
INT-PB	Internal Plasterboard Stud Wall	93.6	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	5.5	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	1.42	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.4	N/A	1.42	Tile

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.4	N/A	1.42	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed
WIR	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbptance	Roof Colour
None			

* Refer to glossary.



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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-GN8YL2-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0102, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	108.2	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	112.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

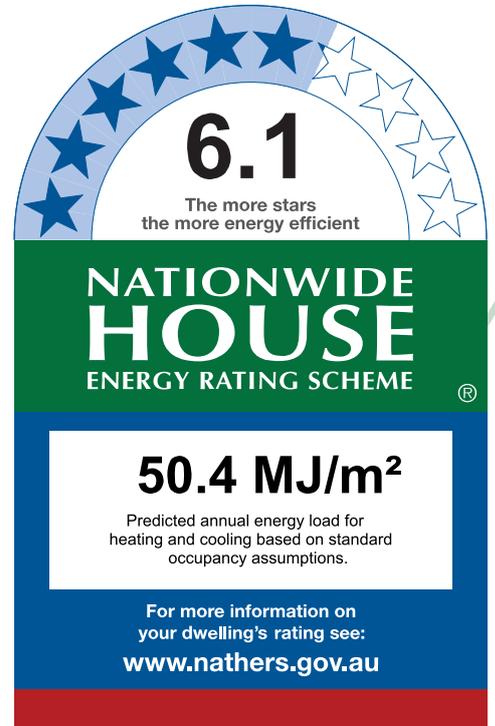
Name	Duncan Hope
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Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
31.6	18.7
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-GN8YL2-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05	2700	2545	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W04	2700	1200	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W01	2700	1200	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	3140	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

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

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	BV-REFL-CAV	2740	196	E		Yes
Bedroom 01	BV-REFL-CAV	2740	3032	E	2734	Yes
Bedroom 01	BV-REFL-CAV	2740	3288	S	2456	Yes
Bedroom 01	BV-REFL-CAV	2740	146	S		Yes
Bedroom 01	BV-REFL-CAV	2740	2457	N		Yes
Bedroom 02	BV-REFL-CAV	2740	2201	E	6137	Yes
Bedroom 03	BV-REFL-CAV	2740	3003	E		Yes
Bedroom 03	BV-REFL-CAV	2740	95	S		Yes
Kitchen/Living	BV-REFL-CAV	2740	355	S		Yes
Kitchen/Living	BV-REFL-CAV	2740	262	S		Yes
Kitchen/Living	BV-REFL-CAV	2740	3998	E		Yes
Kitchen/Living	BV-REFL-CAV	2740	5897	N	5245	Yes
Kitchen/Living	BV-REFL-CAV	2740	323	W		Yes
Kitchen/Living	BV-REFL-CAV	2740	257	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	84.8	2.00
INT-PB	Internal Plasterboard Stud Wall	81.8	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	4.2	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.9	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	1.42	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	1.42	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.2	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	50.2	N/A	1.42	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	7	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

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Explanatory Notes

About this report

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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

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Australian Capital Territory (ACT) licenced 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

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).

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-A694YX-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0103, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	82.9	Suburban
Unconditioned*	5.2	NatHERS climate zone
Total	88.1	56 - Mascot AMO
Garage	0.0	



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

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.

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

6.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

40.7 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
17.0	23.8
MJ/m ²	MJ/m ²

About the rating

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Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-A694YX-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	900	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01	2700	900	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2400	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	1701	E	5270	Yes
Bedroom 02	BV-REFL-CAV	2740	1578	W	353	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	BV-REFL-CAV	2740	5194	N	1390	Yes
Kitchen/Living	BV-REFL-CAV	2740	4030	E		Yes
Kitchen/Living	BV-REFL-CAV	2740	2828	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	85.9	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	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	5.2	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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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-G4GMOQ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0104, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 47.3	Suburban
Unconditioned* 4.1	NatHERS climate zone
Total 51.4	56 - Mascot AMO
Garage 0.0	



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

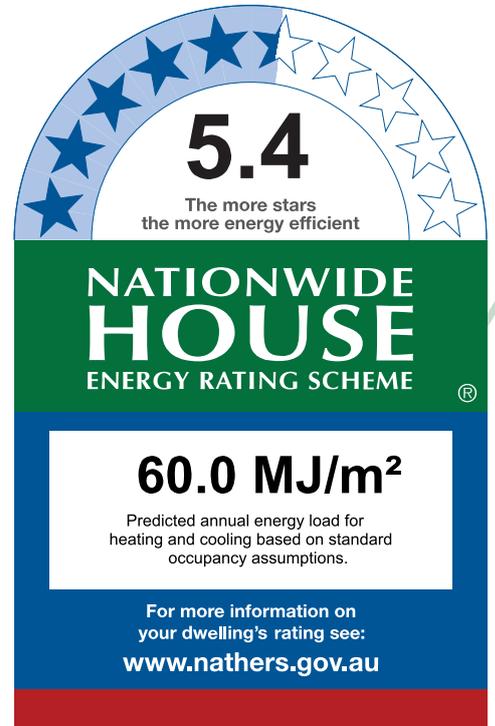
Declaration of interest No Conflict of Interest

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
39.6	20.4
MJ/m ²	MJ/m ²

About the rating

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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.

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W01	2700	600	Sliding	45	S	None
Bedroom	ALM-002-01 A	W02	2700	1990	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03	2700	2100	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	3805	S		Yes
Bedroom	BV-REFL-CAV	2740	3001	W	3387	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	BV-REFL-CAV	2740	2392	N		Yes
Kitchen/Living	BV-REFL-CAV	2740	4629	W	3394	Yes
Study	BV-REFL-CAV	2740	2004	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	41.5	2.00
INT-PB	Internal Plasterboard Stud Wall	27.7	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	4.1	N/A	1.42	Carpet
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	30.8	N/A	1.42	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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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.
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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-XN8AB1-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0201, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	69.6	Suburban
Unconditioned*	6.1	NatHERS climate zone
Total	75.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

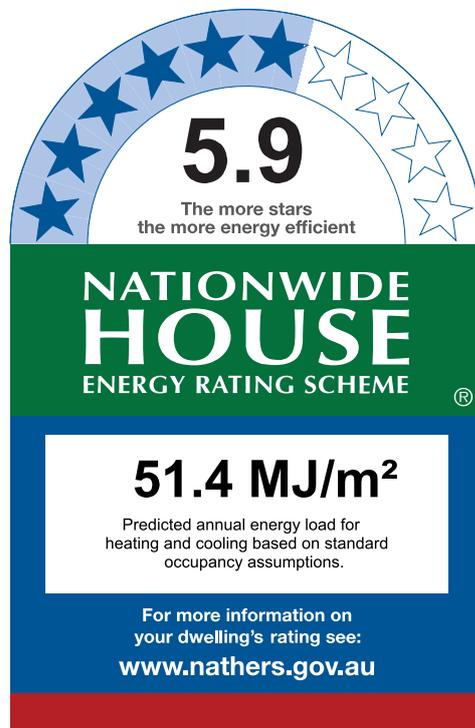
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
31.4	19.9
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	1070	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02	2700	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04	2700	1200	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W03	2700	2215	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05	2700	2027	Sliding	45	S	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1325	W	5792	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3581	W	3500	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2302	S	2002	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2473	N	3342	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3992	W	1176	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2330	S	5713	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	60.2	2.00
INT-PB	Internal Plasterboard Stud Wall	48.3	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	6.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.7	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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).

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-KEUKUL-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0202, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	78.1	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	82.0	56 - Mascot AMO
Garage	0.0	



Accredited assessor

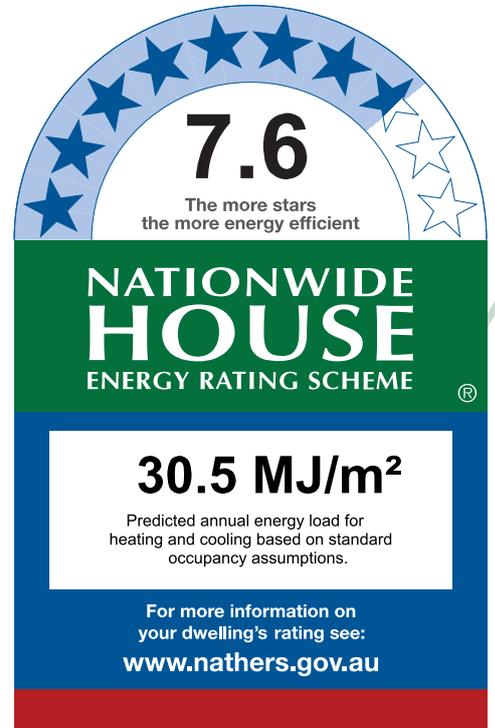
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
17.2	13.3
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-KEUKUL-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1101	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01	2700	1800	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03	2700	3000	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1566	W	386	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1948	N		Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3069	W	3635	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3933	E	2837	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	103.6	2.00
INT-PB	Internal Plasterboard Stud Wall	53.4	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	2.2	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.7	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.8	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.7	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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) licenced 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.

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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-BXSEIA-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0203, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	106.4	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	110.4	56 - Mascot AMO
Garage	0.0	



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

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.

7.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

31.0 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
14.2	16.7
MJ/m ²	MJ/m ²

About the rating

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Verification

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Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	2400	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01	2700	1070	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05	2700	1200	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02	2700	3190	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W04	2700	2400	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2962	E	2753	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3296	S	2453	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2943	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1589	E	6157	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2982	E		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3561	S	2836	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1255	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	577	E	6184	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5813	N	5297	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3949	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	177	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	314	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.1	2.00
INT-PB	Internal Plasterboard Stud Wall	80.2	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.9	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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

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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

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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-E5DP13-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0204, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	82.9	Suburban
Unconditioned*	5.2	NatHERS climate zone
Total	88.1	56 - Mascot AMO
Garage	0.0	



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

34.0 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
18.9	15.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-E5DP13-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-i	2700	900	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-m	2700	900	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04	2700	3600	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02-m	2700	2400	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	975	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1701	E	5476	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	314	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1578	W	373	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5194	N	2683	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4030	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2828	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	82.3	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	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	5.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

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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.
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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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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.
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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-ELFIRG-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0205, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	47.3	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	51.4	56 - Mascot AMO
Garage	0.0	



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

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.

6.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

48.3 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
27.5	20.9
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-ELFIRG-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W01-g	2700	600	Sliding	45	S	None
Bedroom	ALM-002-01 A	W02-g	2700	1990	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-d	2700	2100	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom	Hebel-75-REFL-CAV-RND	2740	3805	S		Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	3001	W	3407	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2392	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4629	W	3413	Yes
Study	Hebel-75-REFL-CAV-RND	2740	2004	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	42.0	2.00
INT-PB	Internal Plasterboard Stud Wall	27.7	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	4.1	N/A	0.00	Carpet
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	30.8	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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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.

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Glossary

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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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-9FAPSS-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0301, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	69.6	Suburban
Unconditioned*	6.1	NatHERS climate zone
Total	75.7	56 - Mascot AMO
Garage	0.0	



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

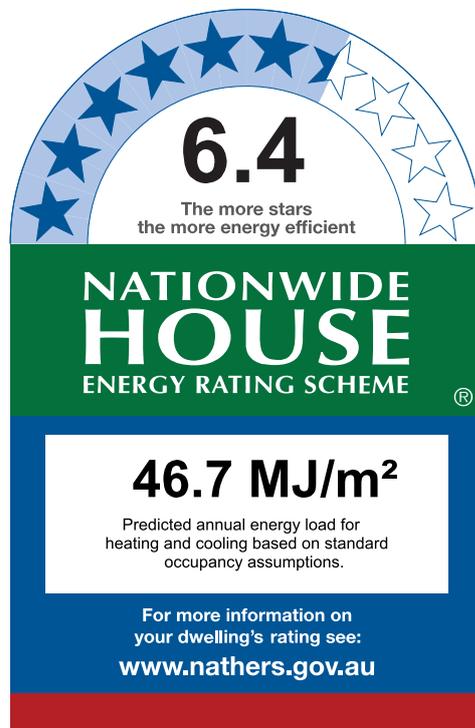
Declaration of interest No Conflict of Interest

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
18.4	28.3
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-9FAPSS-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-e	2700	1070	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-e	2700	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04-a	2700	1200	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W03-h	2700	2215	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05-a	2700	2027	Sliding	45	S	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1325	W	4710	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3581	W	2389	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2302	S	1426	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2473	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3992	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2330	S	5137	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	60.2	2.00
INT-PB	Internal Plasterboard Stud Wall	48.3	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	6.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5YNXDO-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0302, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	78.1	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	82.0	56 - Mascot AMO
Garage	0.0	



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

National Construction Code (NCC) requirements

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

7.8
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

28.4 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
9.4	18.9
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-o	2700	1101	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-o	2700	1800	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-l	2700	3000	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1566	W	386	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1948	N		Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3069	W	322	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3933	E	2837	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	103.9	2.00
INT-PB	Internal Plasterboard Stud Wall	53.4	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	2.9	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.0	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.8	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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).

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-G8E6ZZ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0303, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	106.4	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	110.4	56 - Mascot AMO
Garage	0.0	



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

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.

7.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

30.8 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
14.6	16.2
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-G8E6ZZ-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-v	2700	2400	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-x	2700	1070	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05-f	2700	1200	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02-x	2700	3190	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W04-m	2700	2400	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2962	E	2753	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3296	S	2453	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2943	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1589	E	6157	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2982	E		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3561	S	2836	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1255	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	577	E	6184	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5813	N	5297	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3949	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	177	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	314	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.1	2.00
INT-PB	Internal Plasterboard Stud Wall	80.2	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.7	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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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.
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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.
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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-JPZXTR-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0304, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	82.9	Suburban
Unconditioned*	5.2	NatHERS climate zone
Total	88.1	56 - Mascot AMO
Garage	0.0	



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

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.

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

7.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

35.0 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
19.0	16.0
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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-i-a	2700	900	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-m-a	2700	900	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04-k	2700	3600	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02-m-a	2700	2400	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2676	E	5476	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	314	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1578	W	373	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5194	N	2683	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4030	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2828	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	82.3	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	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	5.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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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-FZU6XY-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0305, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 47.3	Suburban
Unconditioned* 4.1	NatHERS climate zone
Total 51.4	56 - Mascot AMO
Garage 0.0	



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

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.

7.0
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

38.5 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
9.5	29.0
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-FZU6XY-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-004-04 A	Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.90	0.33	0.31	0.35

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W01-g-a	2700	600	Sliding	45	S	None
Bedroom	ALM-004-04 A	W02-g-a	2700	1990	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-004-04 A	W03-d-a	2700	2100	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom	Hebel-75-REFL-CAV-RND	2740	3805	S		Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	3001	W	2296	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2392	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4629	W	2299	Yes
Study	Hebel-75-REFL-CAV-RND	2740	2004	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	42.0	2.00
INT-PB	Internal Plasterboard Stud Wall	27.7	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	4.1	N/A	0.00	Carpet
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	30.8	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-PHWNLW-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0401, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	69.6	Open
Unconditioned*	6.1	NatHERS climate zone
Total	75.7	56 - Mascot AMO
Garage	0.0	



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

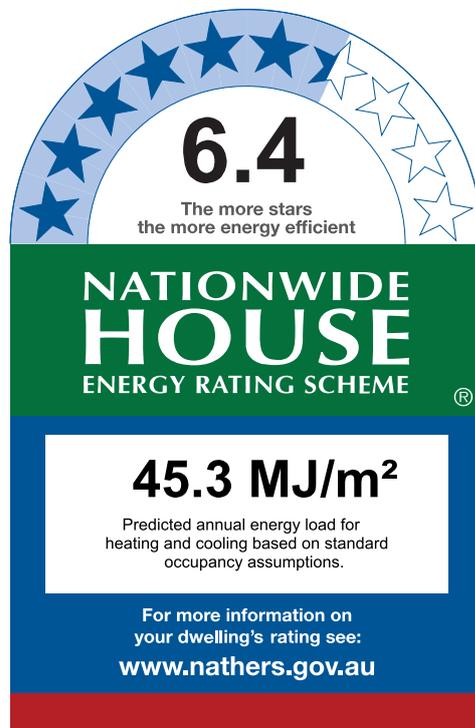
Declaration of interest No Conflict of Interest

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Thermal Performance

Heating	Cooling
22.1	23.2
MJ/m ²	MJ/m ²

About the rating

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-e-a	2700	1070	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-e-a	2700	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04-a-a	2700	1200	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W03-h-a	2700	2215	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05-a-a	2700	2027	Sliding	45	S	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1325	W	4710	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3581	W	2389	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2302	S	1426	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2473	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3992	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2330	S	5137	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	60.2	2.00
INT-PB	Internal Plasterboard Stud Wall	48.3	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	6.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.
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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-ZRPDYX-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0402, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	78.1	Open
Unconditioned*	3.9	NatHERS climate zone
Total	82.0	56 - Mascot AMO
Garage	0.0	



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

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.

7.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

27.2 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
12.0	15.2
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-ZRPDYX-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-o-a	2700	1101	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-o-a	2700	1800	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-l-a	2700	3000	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1566	W	386	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1948	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3069	W	322	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3933	E	2837	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	103.9	2.00
INT-PB	Internal Plasterboard Stud Wall	53.4	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	2.9	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.0	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.8	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-55WU18-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0403, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	106.4	Open
Unconditioned*	4.1	NatHERS climate zone
Total	110.4	56 - Mascot AMO
Garage	0.0	



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

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.

7.6
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

30.4 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
17.6	12.8
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-55WU18-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-v-a	2700	2400	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-x-a	2700	1070	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05-f-a	2700	1200	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02-x-a	2700	3190	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W04-m-a	2700	2400	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2962	E	2753	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3296	S	2453	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2943	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1589	E	6157	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2982	E		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3561	S	2836	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1255	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	577	E	6184	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5813	N	5297	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3949	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	177	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	314	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.1	2.00
INT-PB	Internal Plasterboard Stud Wall	80.2	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.7	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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.
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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-Z5I18Z-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0404, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	82.9	Open
Unconditioned*	5.2	NatHERS climate zone
Total	88.1	56 - Mascot AMO
Garage	0.0	



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

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.

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

7.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

36.0 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
23.3	12.7
MJ/m ²	MJ/m ²

About the rating

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-i-a-a	2700	900	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-m-a-a	2700	900	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04-k-a	2700	3600	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02-m-a-a	2700	2400	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2676	E	5476	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	314	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1578	W	373	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5194	N	2683	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4030	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2828	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	82.3	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	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	5.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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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-KFNMWU-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0405, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	47.3 Open
Unconditioned*	4.1 NatHERS climate zone
Total	51.4 56 - Mascot AMO
Garage	0.0



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

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.

6.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

44.7 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
17.2	27.5
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-KFNMWU-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-004-04 A	Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.90	0.33	0.31	0.35

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W01-g-a-a	2700	600	Sliding	45	S	None
Bedroom	ALM-004-04 A	W02-g-a-a	2700	1990	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W03-d-a-a	2700	2100	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom	Hebel-75-REFL-CAV-RND	2740	3805	S		Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	3001	W	2296	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2392	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4629	W	2299	Yes
Study	Hebel-75-REFL-CAV-RND	2740	2004	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	42.0	2.00
INT-PB	Internal Plasterboard Stud Wall	27.7	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	4.1	N/A	0.00	Carpet
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	30.8	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-FADSRX-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0501, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	69.6	Open
Unconditioned*	6.1	NatHERS climate zone
Total	75.7	56 - Mascot AMO
Garage	0.0	



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

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.

5.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

60.4 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
33.4	27.0
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-FADSRX-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-e-a-a	2700	1070	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-e-a-a	2700	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04-a-a-a	2700	1200	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W03-h-a-a	2700	2215	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05-a-a-a	2700	2027	Sliding	45	S	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 15	0	593	1503	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1325	W	4710	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3581	W	2389	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2302	S	1426	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2473	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3992	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2330	S	5137	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	60.2	2.00
INT-PB	Internal Plasterboard Stud Wall	48.3	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	6.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.6	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-KDXKR6-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0502, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	78.1	Open
Unconditioned*	3.9	NatHERS climate zone
Total	82.0	56 - Mascot AMO
Garage	0.0	



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

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.

6.4
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

45.1 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**

29.3 **15.8**

MJ/m² MJ/m²

About the rating

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

Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-KDXKR6-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-o-a-a	2700	1101	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-o-a-a	2700	1800	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-l-a-a	2700	3000	Sliding	45	E	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 03	0	662	1602	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1566	W	386	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1948	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3069	W	322	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3933	E	2837	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	103.9	2.00
INT-PB	Internal Plasterboard Stud Wall	53.4	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	2.9	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.0	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.8	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licenced 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

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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.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-EKQ3PL-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0503, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	106.4	Open
Unconditioned*	4.1	NatHERS climate zone
Total	110.4	56 - Mascot AMO
Garage	0.0	



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

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.

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

6.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

44.9 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
31.6	13.3
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-v-a-a	2700	2400	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-x-a-a	2700	1070	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05-f-a-a	2700	1200	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02-x-a-a	2700	3190	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W04-m-a-a	2700	2400	Sliding	45	E	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 02	0	592	1511	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2962	E	2753	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3296	S	2453	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2943	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1589	E	6157	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2982	E		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3561	S	2836	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1255	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	577	E	6184	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5813	N	5297	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3949	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	177	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	314	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.1	2.00
INT-PB	Internal Plasterboard Stud Wall	80.2	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	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	19.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.7	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	0.00	Tile

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-G62ZS7-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0504, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 82.9	Open
Unconditioned* 5.2	NatHERS climate zone
Total 88.1	56 - Mascot AMO
Garage 0.0	



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

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.

5.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

52.9 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
39.7	13.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-G62ZS7-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-i-a-a-a	2700	900	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-m-a-a-a	2700	900	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04-k-a-a	2700	3600	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W02-m-a-a-a	2700	2400	Sliding	45	E	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 01	0	614	1503	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2676	E	5476	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	314	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1578	W	373	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5194	N	2683	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4030	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2828	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	82.3	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	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	5.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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.
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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.
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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-997BLZ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address C0505, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	47.3	Open
Unconditioned*	4.1	NatHERS climate zone
Total	51.4	56 - Mascot AMO
Garage	0.0	



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

National Construction Code (NCC) requirements

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

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5.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

61.9 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
33.9	28.0
MJ/m ²	MJ/m ²

About the rating

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Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-997BLZ-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W01-g-a-a-a	2700	600	Sliding	45	S	None
Bedroom	ALM-002-01 A	W02-g-a-a-a	2700	1990	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-d-a-a-a	2700	2100	Sliding	45	W	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 16	0	593	1503	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom	Hebel-75-REFL-CAV-RND	2740	3805	S		Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	3001	W	2296	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2392	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4629	W	2299	Yes
Study	Hebel-75-REFL-CAV-RND	2740	2004	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	42.0	2.00
INT-PB	Internal Plasterboard Stud Wall	27.7	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	4.1	N/A	0.00	Tile
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	30.8	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	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	0.00	No
Bedroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom	2	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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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-NHY4UQ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0101, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	102.4	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	106.3	56 - Mascot AMO
Garage	0.0	



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

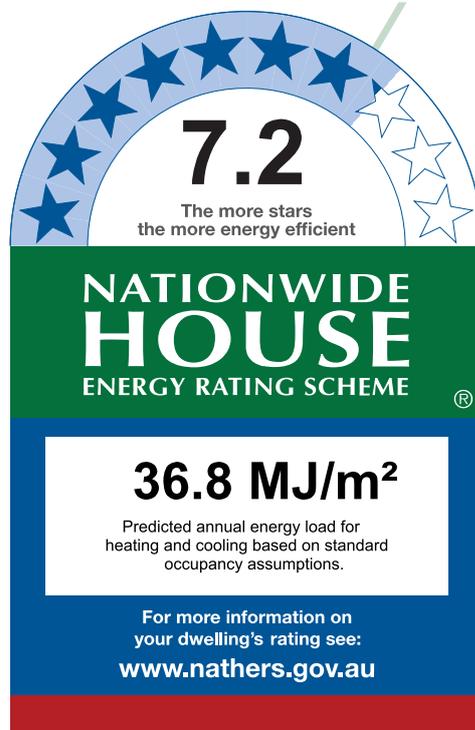
Declaration of interest No Conflict of Interest

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
25.6	11.2
MJ/m ²	MJ/m ²

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

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

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1080	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01	2700	1289	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02	2700	993	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W04	2700	3526	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	1461	E	2825	Yes
Bedroom 02	BV-REFL-CAV	2740	1545	W		Yes
Bedroom 03	BV-REFL-CAV	2740	1850	W		Yes
Bedroom 03	BV-REFL-CAV	2740	1135	W	344	Yes
Kitchen/Living	BV-REFL-CAV	2740	4086	E	2825	Yes
Laundry	BV-REFL-CAV	2740	402	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	89.1	2.00
INT-PB	Internal Plasterboard Stud Wall	92.1	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	3.9	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.1	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	1.42	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.9	N/A	1.42	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.9	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-WWP2XK-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0102, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	50.6	Suburban
Unconditioned*	4.4	NatHERS climate zone
Total	55.0	56 - Mascot AMO
Garage	0.0	



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

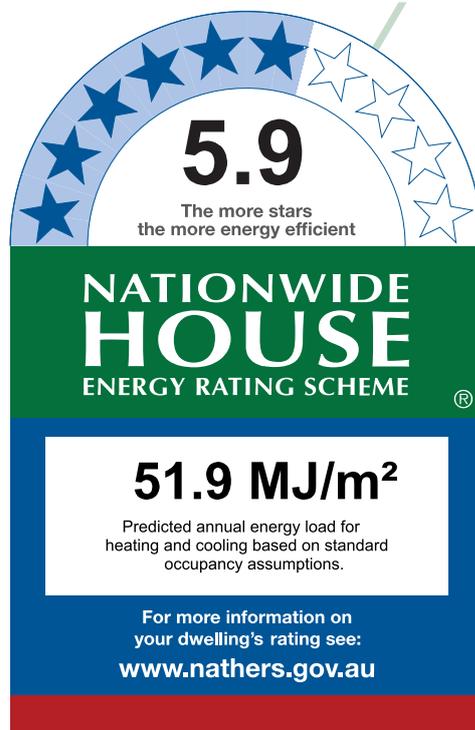
Declaration of interest No Conflict of Interest

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
33.9	18.0
MJ/m ²	MJ/m ²

About the rating

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Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-WWP2XK-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	2100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	2700	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	2985	E	3054	Yes
Bedroom 01	BV-REFL-CAV	2740	2774	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	BV-REFL-CAV	2740	4001	E	3054	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	63.2	2.00
INT-PB	Internal Plasterboard Stud Wall	20.0	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	4.4	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.2	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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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).
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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I5HFVI-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0103, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	68.8	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	72.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

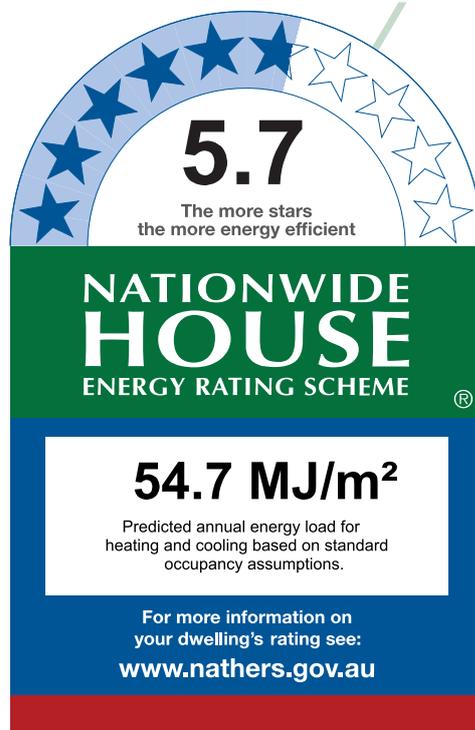
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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



Thermal Performance

Heating	Cooling
45.4	9.4
MJ/m ²	MJ/m ²

About the rating

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

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	2100	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02	2700	2835	Sliding	66	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	2815	Sliding	45	N	None

* Refer to glossary.



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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	678	W		Yes
Bedroom 01	BV-REFL-CAV	2740	2328	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	BV-REFL-CAV	2740	3471	S		Yes
Bedroom 02	BV-REFL-CAV	2740	3006	W	3814	Yes
Bedroom 02	BV-REFL-CAV	2740	3260	N		Yes
Bedroom 02	BV-REFL-CAV	2740	1312	E		Yes
Bedroom 02	BV-REFL-CAV	2740	1736	N		Yes
Bedroom 02	BV-REFL-CAV	2740	1694	E	3070	Yes
Kitchen/Living	BV-REFL-CAV	2740	2205	W		Yes
Kitchen/Living	BV-REFL-CAV	2740	3768	N	3310	Yes
Kitchen/Living	BV-REFL-CAV	2740	149	W		Yes
Kitchen/Living	BV-REFL-CAV	2740	805	E	3070	Yes
Kitchen/Living	BV-REFL-CAV	2740	1647	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	30.9	2.00
INT-PB	Internal Plasterboard Stud Wall	51.2	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	1.42	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	1.42	Tile
bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	1.42	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bathroom	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-4FFLR6-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0104, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.0	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 48.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

Name Duncan Hope

Business name Senica Consultancy Group

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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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.4 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
14.2	19.2
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-4FFLR6-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	1800	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	1800	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	2985	N	3017	Yes
Kitchen/Living	BV-REFL-CAV	2740	3598	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	BV-REFL-CAV	2740	2117	W	3109	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	57.3	2.00
INT-PB	Internal Plasterboard Stud Wall	21.6	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	3.9	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

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

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).

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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.

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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.
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National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
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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-1ETL37-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0105, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 58.6	Suburban
Unconditioned* 4.5	NatHERS climate zone
Total 63.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

Name Duncan Hope

Business name Senica Consultancy Group

Email duncan@senica.com.au

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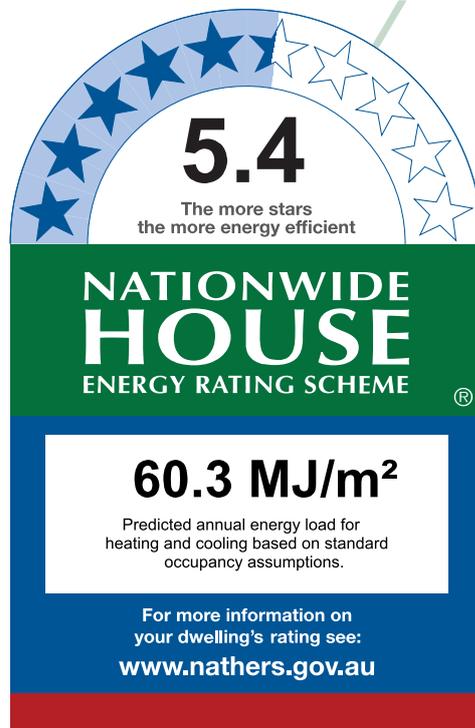
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Thermal Performance

Heating	Cooling
45.2	15.1
MJ/m ²	MJ/m ²

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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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W01	2700	2245	Sliding	45	E	None
Kitchen/Living	ALM-004-01 A	W03	2700	2700	Sliding	45	E	None
Kitchen/Living	ALM-004-01 A	W02	2700	1200	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV-A	Brick Veneer Stud Wall with Reflective Sarking	0.50	Medium	2.50	Yes
BV-REFL-CAV-B	Brick Veneer Stud Wall with Reflective Sarking	0.32	Light (Surfmist)	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	BV-REFL-CAV-B	2740	1820	S		No

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	BV-REFL-CAV-A	2740	3133	E	4833	Yes
Kitchen/Living	BV-REFL-CAV-A	2740	4001	E	3076	Yes
Kitchen/Living	BV-REFL-CAV-B	2740	7790	S		No
Kitchen/Living	BV-REFL-CAV-A	2740	1757	N	3123	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	40.9	2.00
INT-PB	Internal Plasterboard Stud Wall	40.6	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	4.5	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	1.42	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.3	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.0	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-D93410-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0106, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	53.1 Suburban
Unconditioned*	4.0 NatHERS climate zone
Total	57.0 56 - Mascot AMO
Garage	0.0



Accredited assessor

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Business name Senica Consultancy Group

Email duncan@senica.com.au

Phone +61 280067784

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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.

5.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

52.2 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
29.7	22.5
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-D93410-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	2100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	2096	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
BV-REFL-CAV	Brick Veneer Stud Wall with Reflective Sarking	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	BV-REFL-CAV	2740	3408	N		Yes
Bedroom 01	BV-REFL-CAV	2740	3006	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	BV-REFL-CAV	2740	3599	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.5	2.00
INT-PB	Internal Plasterboard Stud Wall	38.1	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	4.0	N/A	1.42	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	1.42	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.3	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.4	N/A	1.42	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	1.42	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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



Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.
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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.
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Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-ZD7BB1-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0201, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 102.4	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 106.3	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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

8.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

24.4 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
13.3	11.1
MJ/m ²	MJ/m ²

About the rating

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Verification

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

Windows

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-g	2700	1080	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-j	2700	1289	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02-j	2700	993	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W04-d	2700	3526	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1461	E	2844	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1545	W		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2985	W	364	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4086	E	2844	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	90.3	2.00
INT-PB	Internal Plasterboard Stud Wall	92.1	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.9	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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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-IKTTRQ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0202, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	61.1	Suburban
Unconditioned*	6.2	NatHERS climate zone
Total	67.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

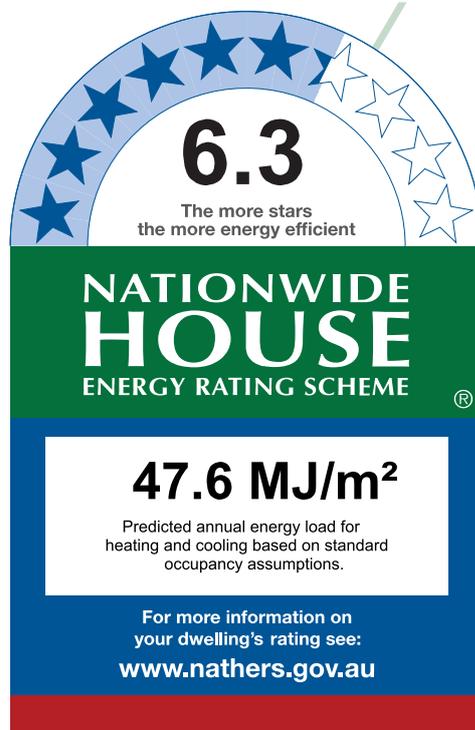
Name	Duncan Hope
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Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
29.1	18.5
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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-d	2700	2100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01-d	2700	2700	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	2700	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	E	3074	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2774	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3918	E	20	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3045	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.5	2.00
INT-PB	Internal Plasterboard Stud Wall	35.3	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	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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-Q2E5Z1-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0203, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 99.9	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 103.7	56 - Mascot AMO
Garage 0.0	



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

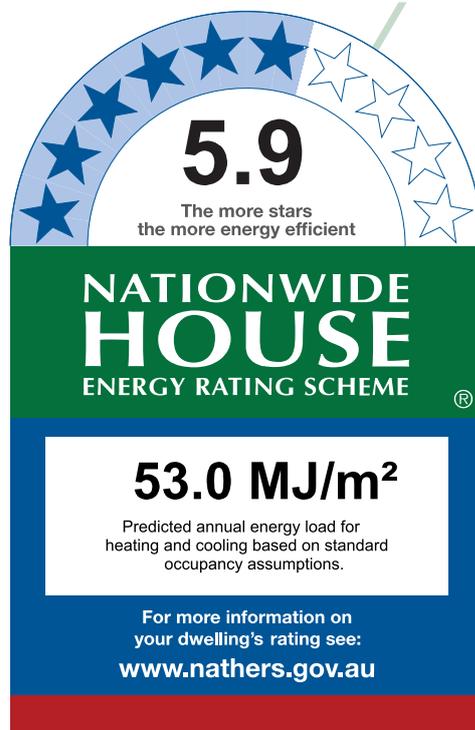
Declaration of interest No Conflict of Interest

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Thermal Performance

Heating	Cooling
25.7	27.3
MJ/m ²	MJ/m ²

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

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

Provisional* values

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	1500	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02	2700	1500	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	ALM-002-01 A	W03	2700	2374	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W05	2700	2318	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W06	2700	2240	Sliding	45	E	None
Study	ALM-001-01 A	W04	2700	1070	Casement	90	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3261	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	139	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	148	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2943	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2999	E	2677	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3604	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2648	S	6198	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	196	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	155	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3981	E		Yes
Study	Hebel-75-REFL-CAV-RND	2740	2951	E	2677	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.0	2.00
INT-PB	Internal Plasterboard Stud Wall	96.4	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	TIMB-001: Suspended Timber Floor	3.5	N/A	0.00	Tile
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.3	N/A	0.00	Tile
Bedroom 01	TIMB-001: Suspended Timber Floor	11.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.3	N/A	0.00	Carpet

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.4	N/A	1.42	Carpet
Bedroom 02	TIMB-001: Suspended Timber Floor	7.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.2	N/A	1.42	Carpet
Bedroom 03	TIMB-001: Suspended Timber Floor	7.0	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	N/A	1.42	Carpet
Ensuite	TIMB-001: Suspended Timber Floor	4.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.4	N/A	0.00	Tile
Hallway	TIMB-001: Suspended Timber Floor	5.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.2	N/A	0.00	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	27.1	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	0.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.6	N/A	1.42	Tile
Pantry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Carpet
Pantry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.7	N/A	1.42	Carpet
Study	TIMB-001: Suspended Timber Floor	4.2	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.1	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Bedroom 03	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Glossary

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-PU49WI-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0204, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	43.9 Suburban
Unconditioned*	5.1 NatHERS climate zone
Total	49.1 56 - Mascot AMO
Garage	0.0



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

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.

5.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

57.9 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
34.7	23.2
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-PU49WI-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-c	2700	1899	Sliding	45	S	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*
Kitchen/Living	ALM-001-01 A	W03-b	2700	974	Casement	90	W	None
Kitchen/Living	ALM-001-04 A	W01-c	2700	2759	Awning	30	S	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND-A	2740	3000	S	4556	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	122	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	2967	W	6613	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3687	S	1574	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	646	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	55.7	2.00
INT-PB	Internal Plasterboard Stud Wall	20.7	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	4.5	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.0	N/A	1.42	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	3.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	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

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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-814D3D-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0205, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 43.9	Suburban
Unconditioned* 5.1	NatHERS climate zone
Total 49.1	56 - Mascot AMO
Garage 0.0	



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

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.

6.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

42.8 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
21.9	20.9
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-814D3D-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1940	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W03	2700	1200	Casement	90	E	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*
Kitchen/Living	ALM-002-01 A	W01	2700	1500	Sliding	45	S	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3000	S	4556	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	314	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	122	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2967	E	6510	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3687	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	225	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	57.0	2.00
INT-PB	Internal Plasterboard Stud Wall	20.7	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	4.5	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.7	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	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.

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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).

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.

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-3FGRYG-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0206, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	62.7	Suburban
Unconditioned*	4.0	NatHERS climate zone
Total	66.6	56 - Mascot AMO
Garage	0.0	



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

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.

5.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

61.5 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
39.7	21.9
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-3FGRYG-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-k	2700	1406	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01-k	2700	1072	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03	2700	2400	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Study	ALM-002-01 A	W06	2700	1200	Sliding	45	S	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3408	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	250	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3599	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4315	S	2203	Yes
Study	Hebel-75-REFL-CAV-RND	2740	4632	S		Yes
Study	Hebel-75-REFL-CAV-RND	2740	2189	W	4563	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	36.7	2.00
INT-PB	Internal Plasterboard Stud Wall	49.8	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.5	N/A	0.00	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed
Study	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-2IURMM-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0207, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	68.8	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	72.7	56 - Mascot AMO
Garage	0.0	



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

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.

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

6.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

39.4 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
29.4	9.9
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-2IURMM-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-a	2700	2100	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-a	2700	2835	Sliding	66	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*
Bedroom 02	ALM-001-01 A	W04	2700	900	Awning	60	N	None
Kitchen/Living	ALM-002-01 A	W01-a	2700	2815	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	127	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3471	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	W	3834	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3260	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1312	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1736	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1694	E	3090	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3768	N	3330	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	149	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	805	E	3090	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3852	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	30.4	2.00
INT-PB	Internal Plasterboard Stud Wall	51.2	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Tile
bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bathroom	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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

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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).

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.

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-WMC4UR-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0208, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	45.0	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	48.9	56 - Mascot AMO
Garage	0.0	



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

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.

8.1
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

24.5 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
5.2	19.3
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-WMC4UR-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-b	2700	1800	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-b	2700	1800	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	N	3037	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2117	W	3129	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	57.4	2.00
INT-PB	Internal Plasterboard Stud Wall	21.6	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

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

Explanatory Notes

About this report

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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.
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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.
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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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-QQN25S-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0301, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 102.4	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 106.3	56 - Mascot AMO
Garage 0.0	



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

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
11.6	15.3
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-g-a	2700	1080	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-j-a	2700	1289	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02-j-a	2700	993	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W04-d-a	2700	3526	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1461	E	2844	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1545	W		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2985	W	364	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4086	E	2844	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	90.3	2.00
INT-PB	Internal Plasterboard Stud Wall	92.1	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.9	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-HISO1L-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0302, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	61.1	Suburban
Unconditioned*	6.2	NatHERS climate zone
Total	67.3	56 - Mascot AMO
Garage	0.0	



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

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.

6.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

41.5 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
18.3	23.3
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-HISO1L-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-d-a	2700	2100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01-d-a	2700	2700	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-f	2700	2700	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	E	3074	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2774	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3918	E	20	No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3045	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.5	2.00
INT-PB	Internal Plasterboard Stud Wall	35.3	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	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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-N70MH7-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0303, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 99.9	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 103.7	56 - Mascot AMO
Garage 0.0	



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

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.

5.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

51.9 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
23.7	28.2
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-i	2700	1500	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02-i	2700	1500	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	ALM-002-01 A	W03-j	2700	2374	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W05-c	2700	2318	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W06-a	2700	2240	Sliding	45	E	None
Study	ALM-001-01 A	W04-e	2700	1070	Casement	90	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3261	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	139	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	148	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2943	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2999	E	2677	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3604	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2648	S	6198	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	196	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	155	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3981	E		No
Study	Hebel-75-REFL-CAV-RND	2740	2951	E	2677	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.1	2.00
INT-PB	Internal Plasterboard Stud Wall	96.5	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	TIMB-001: Suspended Timber Floor	3.5	N/A	0.00	Tile
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.3	N/A	0.00	Tile
Bedroom 01	TIMB-001: Suspended Timber Floor	11.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.3	N/A	0.00	Carpet

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.4	N/A	1.42	Carpet
Bedroom 02	TIMB-001: Suspended Timber Floor	7.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.2	N/A	1.42	Carpet
Bedroom 03	TIMB-001: Suspended Timber Floor	7.0	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	N/A	1.42	Carpet
Ensuite	TIMB-001: Suspended Timber Floor	4.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.4	N/A	0.00	Tile
Hallway	TIMB-001: Suspended Timber Floor	5.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.2	N/A	0.00	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	27.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.6	N/A	1.42	Tile
Pantry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Carpet
Pantry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.7	N/A	1.42	Carpet
Study	TIMB-001: Suspended Timber Floor	4.2	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.1	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Bedroom 03	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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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

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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-PB47VV-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0304, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	46.6 Suburban
Unconditioned*	6.0 NatHERS climate zone
Total	52.6 56 - Mascot AMO
Garage	0.0



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

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.

5.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

51.5 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
24.0	27.5
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-PB47VV-02>. 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-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-c-a	2700	1899	Sliding	45	S	None
Kitchen/Living	ALM-001-04 A	W01-c-a	2700	2759	Awning	30	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND-A	2740	3081	S	3367	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	1786	W	7321	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3687	S	1574	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	646	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	58.5	2.00
INT-PB	Internal Plasterboard Stud Wall	23.5	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	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.6	N/A	1.42	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	3.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-87HD5G-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0305, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 46.4	Suburban
Unconditioned* 6.2	NatHERS climate zone
Total 52.6	56 - Mascot AMO
Garage 0.0	



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

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.

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

6.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

42.1 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
28.8	13.2
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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-v	2700	1940	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-v	2700	1500	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-001-01 A	W03-t	2700	1200	Casement	90	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3124	S	3399	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	314	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3687	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	225	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1819	E	6510	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.8	2.00
INT-PB	Internal Plasterboard Stud Wall	23.8	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	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-SR84JU-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0306, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	71.4	Suburban
Unconditioned*	4.0	NatHERS climate zone
Total	75.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

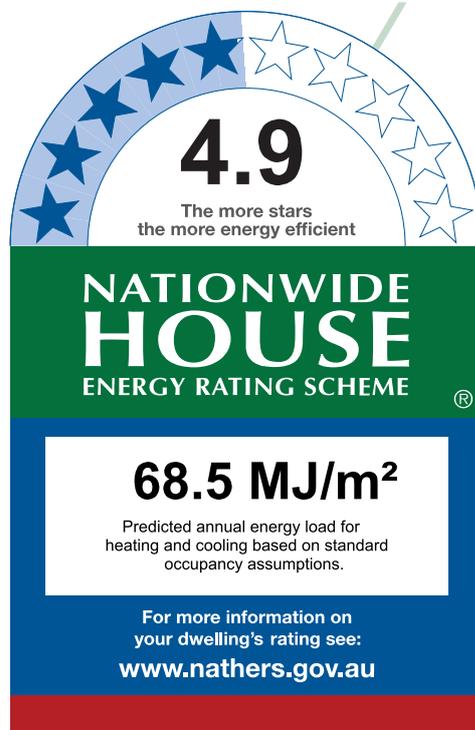
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
42.2	26.3
MJ/m ²	MJ/m ²

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

Provisional* values

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

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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62
ALM-004-04 A	Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.90	0.33	0.31	0.35

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-04 A	W02-k-a	2700	1406	Sliding	45	W	None
Ensuite	ALM-004-01 A	W05	2700	1200	Awning	60	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-004-04 A	W01-k-a	2700	1072	Sliding	45	W	None
Kitchen/Living	ALM-004-01 A	W03-q	2700	2816	Sliding	66	S	None
Study	ALM-004-04 A	W06-d	2700	1200	Sliding	45	S	None
Study	ALM-004-01 A	W04	2700	2400	Sliding	66	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
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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND-A	2740	3513	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	2985	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	101	N		Yes
Ensuite	Hebel-75-REFL-CAV-RND-B	2740	1577	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3992	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3904	S	3492	Yes
Study	Hebel-75-REFL-CAV-RND-A	2740	3547	S		Yes
Study	Hebel-75-REFL-CAV-RND-B	2740	3376	W	3934	Yes
Study	Hebel-75-REFL-CAV-RND-B	2740	1635	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	36.7	2.00
INT-PB	Internal Plasterboard Stud Wall	59.7	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Carpet
Kitchen/Living	TIMB-001: Suspended Timber Floor	32.1	N/A	0.00	Carpet

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	1.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.2	N/A	0.00	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed
Study	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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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.
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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-98Y5V8-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0307, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	68.8	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	72.7	56 - Mascot AMO
Garage	0.0	



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

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.

7.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

36.8 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
24.0	12.8
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-98Y5V8-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-a-a	2700	2100	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-a-a	2700	2835	Sliding	66	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*
Bedroom 02	ALM-001-01 A	W04-g	2700	900	Awning	60	N	None
Kitchen/Living	ALM-002-01 A	W01-a-a	2700	2815	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3598	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	W	3834	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3260	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1312	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1736	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1694	E	3090	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3768	N	3330	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	149	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	805	E	3090	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3852	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	30.4	2.00
INT-PB	Internal Plasterboard Stud Wall	51.2	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Tile
bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bathroom	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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) licenced 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-NLKPPH-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0308, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.0	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 48.9	56 - Mascot AMO
Garage 0.0	



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

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.

8.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

24.7 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
5.4	19.3
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-NLKPPH-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-b-a	2700	1800	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-b-a	2700	1800	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	N	3037	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2117	W	3129	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	57.4	2.00
INT-PB	Internal Plasterboard Stud Wall	21.6	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

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

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.
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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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.
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Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-NZHOOC-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0401, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	102.4	Open
Unconditioned*	3.9	NatHERS climate zone
Total	106.3	56 - Mascot AMO
Garage	0.0	



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

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.

8.1
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

25.3 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
13.8	11.5
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-NZHOOC-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-g-a-a	2700	1080	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-j-a-a	2700	1289	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02-j-a-a	2700	993	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W04-d-a-a	2700	3526	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1461	E	2844	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1545	W		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2985	W	364	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4086	E	2844	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	90.3	2.00
INT-PB	Internal Plasterboard Stud Wall	92.1	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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

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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-BYWIHK-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0402, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	59.0	Open
Unconditioned*	6.2	NatHERS climate zone
Total	65.2	56 - Mascot AMO
Garage	0.0	



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

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.

7.2
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

36.2 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
18.3	17.9
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-BYWIHK-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-d-a-a	2700	2100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01-d-a-a	2700	2700	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-f-a	2700	2700	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	E	3074	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2774	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3918	E	20	No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3045	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.5	2.00
INT-PB	Internal Plasterboard Stud Wall	35.3	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	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.8	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

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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-W9BS1Y-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0403, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	99.9	Open
Unconditioned*	3.8	NatHERS climate zone
Total	103.7	56 - Mascot AMO
Garage	0.0	



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

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.

6.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

46.3 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
27.6	18.7
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-W9BS1Y-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-i-a	2700	1500	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02-i-a	2700	1500	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	ALM-002-01 A	W03-j-a	2700	2374	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W05-c-a	2700	2318	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W06-a-a	2700	2240	Sliding	45	E	None
Study	ALM-001-01 A	W04-e-a	2700	1070	Casement	90	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3261	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	139	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	148	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2943	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2999	E	2677	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3604	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2648	S	6198	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	196	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	155	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3981	E		No
Study	Hebel-75-REFL-CAV-RND	2740	2951	E	2677	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.1	2.00
INT-PB	Internal Plasterboard Stud Wall	96.5	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	TIMB-001: Suspended Timber Floor	3.5	N/A	0.00	Tile
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.3	N/A	0.00	Tile
Bedroom 01	TIMB-001: Suspended Timber Floor	11.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.3	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.4	N/A	1.42	Tile
Bedroom 02	TIMB-001: Suspended Timber Floor	7.9	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.6	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.2	N/A	1.42	Tile
Bedroom 03	TIMB-001: Suspended Timber Floor	7.0	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.2	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	N/A	1.42	Tile
Ensuite	TIMB-001: Suspended Timber Floor	4.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.4	N/A	0.00	Tile
Hallway	TIMB-001: Suspended Timber Floor	5.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.2	N/A	0.00	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	27.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.6	N/A	1.42	Tile
Pantry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Tile
Pantry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.7	N/A	1.42	Tile
Study	TIMB-001: Suspended Timber Floor	4.2	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.1	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.0	N/A	1.42	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Bedroom 03	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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).
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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.
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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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-HY9015-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0404, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	46.6 Open
Unconditioned*	6.0 NatHERS climate zone
Total	52.6 56 - Mascot AMO
Garage	0.0



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

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.

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6.7
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

42.1 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
20.2	22.0
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-HY9015-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.



Certificate Check

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

Ceiling penetrations*

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

Windows

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

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-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-c-a-a	2700	1899	Sliding	45	S	None
Kitchen/Living	ALM-001-04 A	W01-c-a-a	2700	2759	Awning	30	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND-A	2740	3081	S	3367	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	1786	W	7321	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3687	S	1574	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	646	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	58.5	2.00
INT-PB	Internal Plasterboard Stud Wall	23.5	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	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.6	N/A	1.42	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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).

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5OMDDY-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0405, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	46.4 Open
Unconditioned*	6.2 NatHERS climate zone
Total	52.6 56 - Mascot AMO
Garage	0.0



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

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.

7.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

36.0 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
25.2	10.8
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-5OMDDY-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-v-a	2700	1940	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-v-a	2700	1500	Sliding	45	S	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*
Kitchen/Living	ALM-001-01 A	W03-t-a	2700	1200	Casement	90	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3124	S	3399	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	314	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3687	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	225	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1819	E	6510	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.8	2.00
INT-PB	Internal Plasterboard Stud Wall	23.8	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	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.3	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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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-66RHDE-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0406, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	71.4	Open
Unconditioned*	4.0	NatHERS climate zone
Total	75.4	56 - Mascot AMO
Garage	0.0	



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

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.

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

4.8
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

69.6 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
44.8	24.8
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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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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W02-k-a-a	2700	1406	Sliding	45	W	None
Kitchen/Living	ALM-004-01 A	W01-k-a-a	2700	1072	Sliding	45	W	None
Kitchen/Living	ALM-004-01 A	W03-q-a	2700	2816	Sliding	66	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Living 131	ALM-004-01 A	W05-g	2700	1200	Awning	60	S	None
Study	ALM-004-01 A	W06-d-a	2700	1200	Sliding	45	S	None
Study	ALM-004-01 A	W04-n	2700	2400	Sliding	66	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
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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND-A	2740	3513	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	2985	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	101	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3992	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3904	S	3492	Yes
Living 131	Hebel-75-REFL-CAV-RND-B	2740	1577	S		Yes
Study	Hebel-75-REFL-CAV-RND-A	2740	3547	S		Yes
Study	Hebel-75-REFL-CAV-RND-B	2740	3376	W	3934	Yes
Study	Hebel-75-REFL-CAV-RND-B	2740	1635	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	36.7	2.00
INT-PB	Internal Plasterboard Stud Wall	59.7	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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	33.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.2	N/A	0.00	Tile

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living 131	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Living 131	1	Downlight	200	Sealed
Pantry	1	Downlight	100	Sealed
Study	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-18XPEZ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0407, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	68.8	Open
Unconditioned*	3.9	NatHERS climate zone
Total	72.7	56 - Mascot AMO
Garage	0.0	



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

32.2 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
22.4	9.8
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-18XPEZ-02>. 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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-a-a-a	2700	2100	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-a-a-a	2700	2835	Sliding	66	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*
Bedroom 02	ALM-001-01 A	W04-g-a	2700	900	Awning	60	N	None
Kitchen/Living	ALM-002-01 A	W01-a-a-a	2700	2815	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3598	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	W	3834	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3260	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1312	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1736	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1694	E	3090	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3768	N	3330	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	149	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	805	E	3090	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3852	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	30.4	2.00
INT-PB	Internal Plasterboard Stud Wall	51.2	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Tile
bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bathroom	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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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.
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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-48YZKJ-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0408, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	45.0	Open
Unconditioned*	3.9	NatHERS climate zone
Total	48.9	56 - Mascot AMO
Garage	0.0	



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

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.

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

8.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

24.0 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
5.8	18.2
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-48YZKJ-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-b-a-a	2700	1800	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-b-a-a	2700	1800	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	N	3037	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2117	W	3129	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	57.4	2.00
INT-PB	Internal Plasterboard Stud Wall	21.6	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

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

* Refer to glossary.

Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

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Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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.
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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-JBVEMG-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0501, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	102.4 Open
Unconditioned*	3.9 NatHERS climate zone
Total	106.3 56 - Mascot AMO
Garage	0.0



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.7 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
21.9	11.7
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-JBVEMG-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-g-a-a-a	2700	1080	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-j-a-a-a	2700	1289	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02-j-a-a-a	2700	993	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W04-d-a-a-a	2700	3526	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	1461	E	5852	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-A	2740	1545	W		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND-A	2740	2985	W	364	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	4086	E	2844	Yes
Laundry	Hebel-75-REFL-CAV-RND-B	2740	322	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	89.5	2.00
INT-PB	Internal Plasterboard Stud Wall	92.1	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.9	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-6FHNS8-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D050, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	49.0	Open
Unconditioned*	4.4	NatHERS climate zone
Total	53.4	56 - Mascot AMO
Garage	0.0	



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

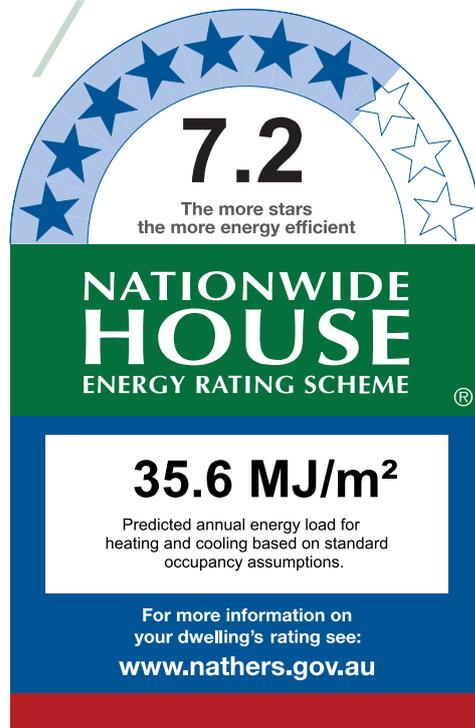
Declaration of interest No Conflict of Interest

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
17.5	18.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-6FHNS8-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom	ALM-002-01 A	W01	2700	2100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02	2700	3000	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND	2740	2985	E	3671	Yes
Bedroom	Hebel-75-REFL-CAV-RND	2740	2181	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	127	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	656	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3874	E	3015	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	275	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	308	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	80.8	2.00

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	4.4	N/A	0.00	Tile
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.3	N/A	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	0.00	No
Bedroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Australian Capital Territory (ACT) licenced assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-HE3YXX-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0503, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	85.4	Open
Unconditioned*	3.7	NatHERS climate zone
Total	89.1	56 - Mascot AMO
Garage	0.0	



Accredited assessor

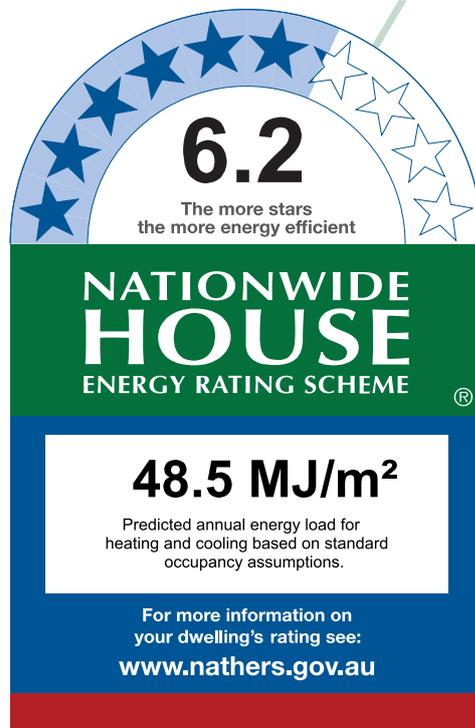
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
35.4	13.2
MJ/m ²	MJ/m ²

About the rating

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

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-002-01 A	W04	2700	1500	Sliding	45	S	None
Bedroom0 1	ALM-002-01 A	W05	2700	2400	Sliding	45	E	None
Ensuite	ALM-002-01 A	W03	1200	1500	Sliding	45	S	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*
Kitchen/Living	ALM-002-01 A	W06	2700	2100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W07	2700	2100	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	S		Yes
Bedroom0 1	Hebel-75-REFL-CAV-RND	2740	4191	E	3290	Yes
Bedroom0 1	Hebel-75-REFL-CAV-RND	2740	3091	S		Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	2637	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	338	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5864	E	3290	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	119.1	2.00

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	3.7	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom0 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.8	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	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	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom0 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom0 1	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5NXI2L-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0504, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	46.6	Open
Unconditioned*	6.0	NatHERS climate zone
Total	52.6	56 - Mascot AMO
Garage	0.0	



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

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.

6.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

47.7 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
25.3	22.3
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-5NXI2L-02>. 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-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-c-a-a-a	2700	1899	Sliding	45	S	None
Kitchen/Living	ALM-001-04 A	W01-c-a-a-a	2700	2759	Awning	30	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND-A	2740	3081	S	3367	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	1786	W	7321	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3687	S	1574	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	641	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.4	2.00
INT-PB	Internal Plasterboard Stud Wall	23.5	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	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.6	N/A	1.42	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.9	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	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.

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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-LE8KXK-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0505, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	46.4	Open
Unconditioned*	6.2	NatHERS climate zone
Total	52.6	56 - Mascot AMO
Garage	0.0	



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

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.

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

7.2
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

36.4 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
25.9	10.5
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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Genuine certificate

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Ceiling penetrations*

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

Windows

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

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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-v-a-a	2700	1940	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-v-a-a	2700	1500	Sliding	45	S	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*
Kitchen/Living	ALM-001-01 A	W03-t-a-a	2700	1200	Casement	90	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3124	S	3399	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	314	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3687	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	225	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1819	E	6510	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	59.9	2.00
INT-PB	Internal Plasterboard Stud Wall	23.8	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	6.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.3	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

* Refer to glossary.

Explanatory Notes

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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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-HFX6AU-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0506, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	71.4	Open
Unconditioned*	4.0	NatHERS climate zone
Total	75.4	56 - Mascot AMO
Garage	0.0	



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

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.

5.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

58.0 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
37.4	20.6
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-HFX6AU-02>. 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
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ATB-004-01 B	W02-k-a-a-a	2700	1406	Sliding	45	W	None
Kitchen/Living	ATB-004-01 B	W01-k-a-a-a	2700	1072	Sliding	45	W	None
Kitchen/Living	ATB-004-01 B	W03-q-a-a	2700	2816	Sliding	66	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Living 131	ATB-004-01 B	W05-g-a	2700	1200	Awning	60	S	None
Study	ATB-004-01 B	W06-d-a-a	2700	1200	Sliding	45	S	None
Study	ATB-004-01 B	W04-n-a	2700	2400	Sliding	66	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
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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (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	Hebel-75-REFL-CAV-RND-A	2740	3513	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	2985	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	101	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3992	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3904	S	3492	Yes
Living 131	Hebel-75-REFL-CAV-RND-B	2740	1577	S		Yes
Study	Hebel-75-REFL-CAV-RND-A	2740	3547	S		Yes
Study	Hebel-75-REFL-CAV-RND-B	2740	3376	W	3934	Yes
Study	Hebel-75-REFL-CAV-RND-B	2740	1635	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	36.7	2.00
INT-PB	Internal Plasterboard Stud Wall	59.7	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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	33.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.2	N/A	0.00	Tile

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Living 131	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Living 131	1	Downlight	200	Sealed
Pantry	1	Downlight	100	Sealed
Study	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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) licenced 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.
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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-6QE2U8-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0507, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	68.8	Open
Unconditioned*	3.9	NatHERS climate zone
Total	72.7	56 - Mascot AMO
Garage	0.0	



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

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
17.0	9.2
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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-a-a-a-a	2700	2100	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-a-a-a-a	2700	2835	Sliding	66	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*
Bedroom 02	ALM-001-01 A	W04-g-a-a	2700	900	Awning	60	N	None
Kitchen/Living	ALM-002-01 A	W01-a-a-a-a	2700	2815	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3598	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	W	3834	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3260	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1312	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1736	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1694	E	3090	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3768	N	3330	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	149	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	805	E	3090	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3852	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	30.4	2.00
INT-PB	Internal Plasterboard Stud Wall	51.2	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Tile
bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bathroom	1	Downlight	100	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	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

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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).

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-RWFVOE-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0508, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	45.0 Open
Unconditioned*	3.9 NatHERS climate zone
Total	48.9 56 - Mascot AMO
Garage	0.0



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

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.

8.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

23.3 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
4.8	18.5
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-RWFVOE-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-b-a-a-a	2700	1800	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-b-a-a-a	2700	1800	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	N	3037	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2117	W	3129	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	57.4	2.00
INT-PB	Internal Plasterboard Stud Wall	21.6	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.0	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

* Refer to glossary.



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	1.79	0.50	Medium

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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.
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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-2VR5V4-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0601, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	105.7	Open
Unconditioned*	2.8	NatHERS climate zone
Total	108.5	56 - Mascot AMO
Garage	0.0	



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

34.0 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
10.6	23.3
MJ/m ²	MJ/m ²

About the rating

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Verification

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Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	2400	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W04	2700	2100	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05	2700	3000	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02	2700	3900	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	1500	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3366	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1685	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3840	N	608	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2985	E	536	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1503	N	2323	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	4001	E	536	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	7219	N	608	Yes
WIR	Hebel-75-REFL-CAV-RND	2740	1503	N	608	Yes
WIR	Hebel-75-REFL-CAV-RND	2740	1609	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	83.7	2.00
Hebel Partition Wall	Hebel Partition Wall	2.7	0.00
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	54.3	2.00

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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.0	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	47.5	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.3	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
WIR	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Study	1	Downlight	200	Sealed
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Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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.
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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).
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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-XHBWOT-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0602, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	102.8	Open
Unconditioned*	3.7	NatHERS climate zone
Total	106.6	56 - Mascot AMO
Garage	0.0	



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

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.

5.4
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

59.3 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
43.1	16.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-XHBWOT-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07	2700	1500	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W06	2700	900	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W08	2700	1500	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	ALM-002-01 A	W10	2700	2700	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W09	2700	1500	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01	2700	2400	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W02	2700	2189	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	2229	Sliding	45	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1820	W	6442	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1831	S	344	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	677	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1746	S	344	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3599	E	3987	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3366	S		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	550	E	3987	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3366	S	4300	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	317	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5906	E	536	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	242	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	150.2	2.00

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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.3	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.00	Carpet

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed

* Refer to glossary.



Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-3FAQWY-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0603, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	71.0	Open
Unconditioned*	4.2	NatHERS climate zone
Total	75.2	56 - Mascot AMO
Garage	0.0	



Accredited assessor

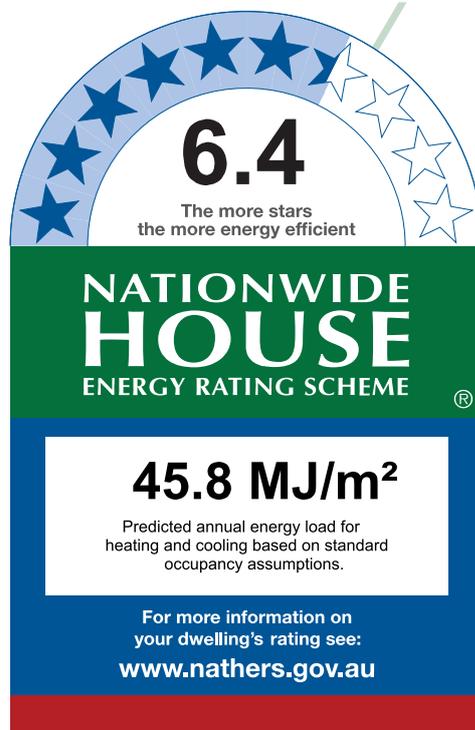
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
36.6	9.2
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-3FAQWY-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04	2700	1905	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W03	2700	1950	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W02	2700	1200	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W01	2700	1500	Sliding	45	S	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	S	3373	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3091	S	3373	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	254	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1820	E	6482	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3301	S	337	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	404	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	128.1	2.00

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	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.9	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

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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-5LOMTC-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0604, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 71.4	Open
Unconditioned* 4.0	NatHERS climate zone
Total 75.4	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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

5.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

62.1 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
45.1	17.0
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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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?

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

Windows

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

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

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
ATB-004-01 B	AI Thermally Broken B DG Air Fill Clear-Clear	3.60	0.54	0.51	0.57

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ATB-004-01 B	W02-k-a-a-a-a	2700	1406	Sliding	45	W	None
Kitchen/Living	ATB-004-01 B	W01-k-a-a-a-a	2700	1072	Sliding	45	W	None
Kitchen/Living	ATB-004-01 B	W03-q-a-a-a	2700	2816	Sliding	66	S	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*
Living 131	ATB-004-01 B	W05-g-a-a	2700	1200	Awning	60	S	None
Study	ATB-004-01 B	W06-d-a-a-a	2700	1200	Sliding	45	S	None
Study	ATB-004-01 B	W04-n-a-a	2700	2400	Sliding	66	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
None					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3513	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	101	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3992	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3904	S	3492	Yes
Living 131	Hebel-75-REFL-CAV-RND	2740	1577	S	348	Yes
Study	Hebel-75-REFL-CAV-RND	2740	3547	S		Yes
Study	Hebel-75-REFL-CAV-RND	2740	3376	W	3934	Yes
Study	Hebel-75-REFL-CAV-RND	2740	1635	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	36.9	2.00
INT-PB	Internal Plasterboard Stud Wall	56.5	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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile
Kitchen/Living	TIMB-001: Suspended Timber Floor	33.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.2	N/A	0.00	Tile
Living 131	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Living 131	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Living 131	1	Downlight	200	Sealed
Pantry	1	Downlight	100	Sealed
Study	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		



Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

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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).
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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5YGKYX-02

Generated on 24 Nov 2022 using Hero 3.0.1

Property

Address D0605, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	102.3 Open
Unconditioned*	4.0 NatHERS climate zone
Total	106.3 56 - Mascot AMO
Garage	0.0



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.7 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
22.6	11.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-5YGKYX-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04	2700	2997	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W05	2700	1500	Awning	30	W	None
Bedroom 03	ALM-002-01 A	W03	2700	1200	Sliding	45	N	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*
Kitchen/Living	ALM-002-01 A	W01	2700	3410	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	900	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W06	2700	1035	Awning	60	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
None					

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3006	N	2140	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	W		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2201	N	2140	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1588	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3895	N	3138	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3112	W	3918	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3196	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1270	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1525	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1990	E	5439	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	W		Yes
WIR	Hebel-75-REFL-CAV-RND	2740	2053	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	115.5	2.00

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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.3	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
WIR	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
WIR	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	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.

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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-3QHEP2-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0201, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	73.6	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	77.9	56 - Mascot AMO
Garage	0.0	



Accredited assessor

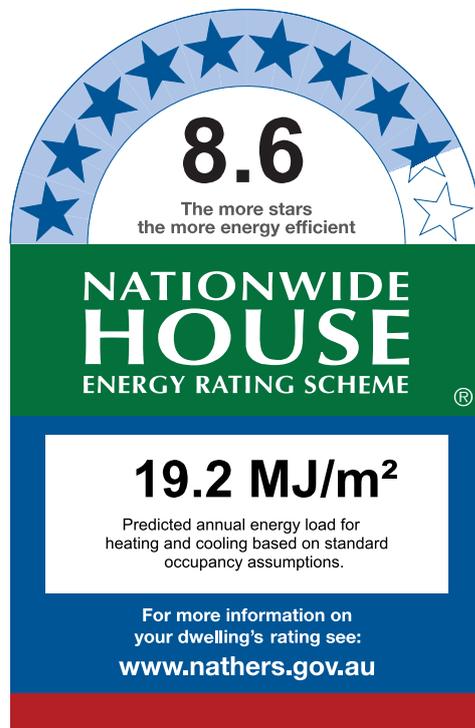
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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Thermal Performance

Heating	Cooling
3.1	16.1
MJ/m ²	MJ/m ²

About the rating

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-002-01 A	W03	2700	1885	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	1100	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1545	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1481	W	3213	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	318	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W	1519	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1694	N	2249	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	593	W	3213	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1503	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1597	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2404	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.2	2.00
INT-PB	Internal Plasterboard Stud Wall	54.1	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.5	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile
Linen	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.7	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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.
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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).
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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
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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-VV8SFW-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0202, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	81.2	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	85.4	56 - Mascot AMO
Garage	0.0	



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

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.

6.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

48.7 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
30.7	18.0
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-VV8SFW-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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1335	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W03	2700	1505	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	3110	Sliding	45	E	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 01	0	1090	569	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	1588	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1990	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	6097	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	720	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1608	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	318	W		Yes
Hallway	HEBEL-100-REFL-CAV1	2740	144	E		Yes
Hallway	HEBEL-100-REFL-CAV1	2740	97	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8002	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2628	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.0	2.00
INT-PB	Internal Plasterboard Stud Wall	60.0	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.0	N/A	0.00	Tile
Storage	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-8E64EB-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0203, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	50.8	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	55.1	56 - Mascot AMO
Garage	0.0	



Accredited assessor

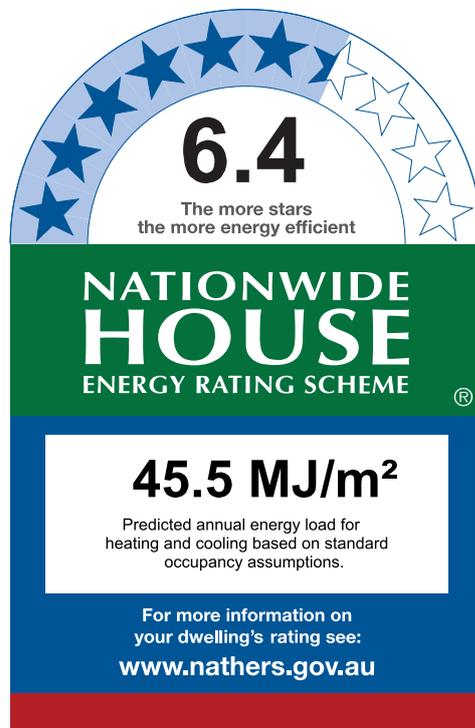
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
25.5	20.0
MJ/m ²	MJ/m ²

About the rating

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1545	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	3090	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	E	2523	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	105	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3598	E	2523	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	63.2	2.00
INT-PB	Internal Plasterboard Stud Wall	37.8	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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-SQWSC7-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0204, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 49.2	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 53.0	56 - Mascot AMO
Garage 0.0	



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

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.

5.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

53.2 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
32.6	20.6
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-SQWSC7-01>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-002-01 A	W02	2700	3005	Sliding	45	E	None
bedroom 01	ALM-002-01 A	W01	2700	2305	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	149	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	254	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	E	2523	Yes
Walkway	HEBEL-100-REFL-CAV1	2740	148	SE		Yes
Walkway	HEBEL-100-REFL-CAV1	2740	51	S		Yes
Walkway	HEBEL-100-REFL-CAV1	2740	174	SE		Yes
Walkway	HEBEL-100-REFL-CAV1	2740	127	E		Yes
bedroom 01	HEBEL-100-REFL-CAV1	2740	3091	E	2523	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.6	2.00
INT-PB	Internal Plasterboard Stud Wall	36.4	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	3.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	21.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Tile
Walkway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.00	Tile
bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed
Walkway	1	Downlight	200	Sealed
bedroom 01	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-ZWHULK-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0205, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	73.5	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	77.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

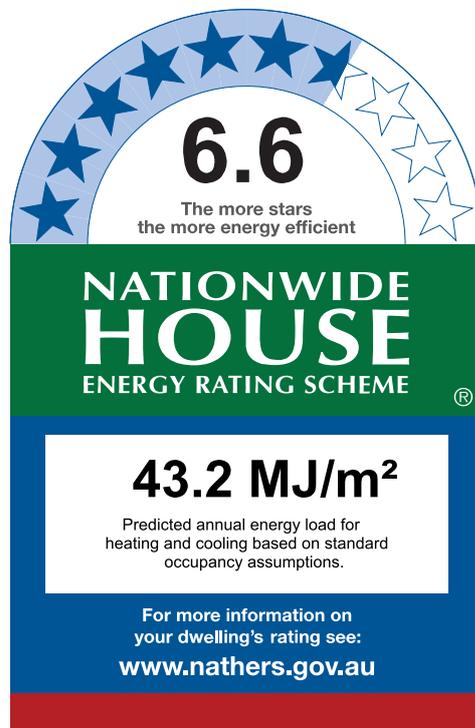
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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



Thermal Performance

Heating	Cooling
31.2	12.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-ZWHULK-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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1205	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	2665	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	3345	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1439	E	2523	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3239	E	2523	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2523	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	72.1	2.00
INT-PB	Internal Plasterboard Stud Wall	53.4	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-YMIIV2-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0206, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 76.3	Suburban
Unconditioned* 4.5	NatHERS climate zone
Total 80.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

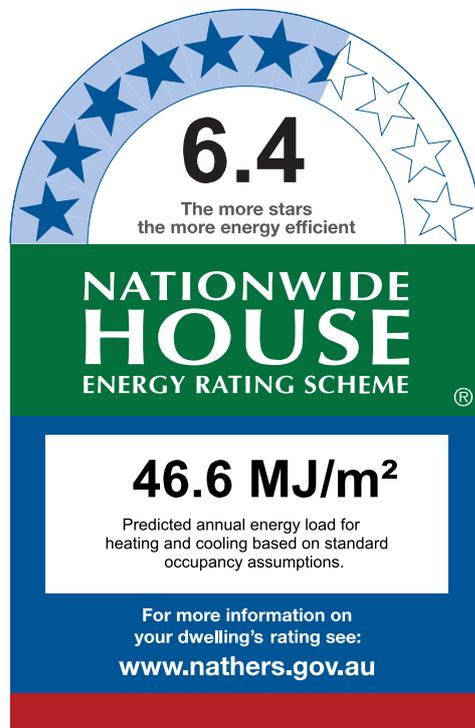
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
25.5	21.1
MJ/m ²	MJ/m ²

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

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

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	2305	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04	2700	3365	Sliding	45	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*
Study	ALM-002-01 A	W02	2700	890	Sliding	45	S	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	381	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3599	E	2523	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3492	S	1286	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2900	S	1286	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1588	E	2523	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4043	E	2523	Yes
Study	HEBEL-100-REFL-CAV1	2740	2307	S	1286	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	47.6	2.00
INT-PB	Internal Plasterboard Stud Wall	67.3	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	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-17TNCN-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0207, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 50.5	Suburban
Unconditioned* 5.6	NatHERS climate zone
Total 56.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

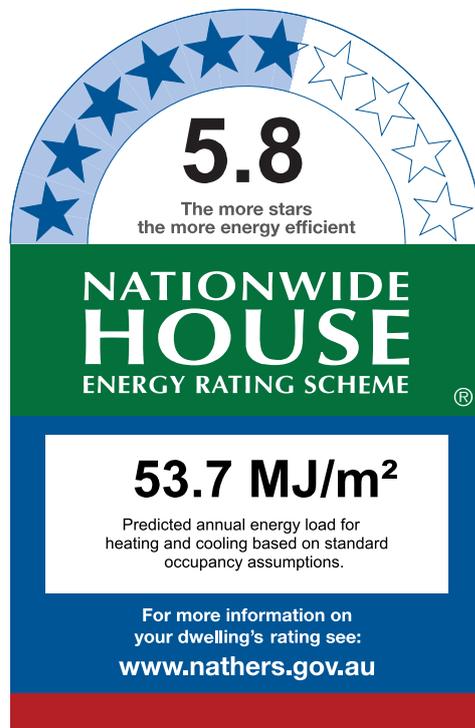
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
34.2	19.5
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-17TNCN-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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	890	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W02	2700	1100	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	3600	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	S	1286	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2286	W	5474	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5334	S	3572	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4424	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	51.6	2.00
INT-PB	Internal Plasterboard Stud Wall	32.3	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	5.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	24.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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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) licenced 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-PMG3VQ-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0208, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 73.9	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 77.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

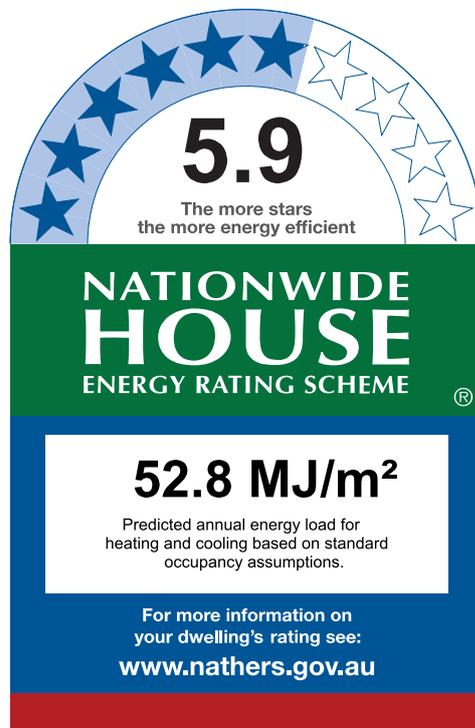
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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Thermal Performance

Heating	Cooling
40.6	12.2
MJ/m ²	MJ/m ²

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Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

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

Provisional* values

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

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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W04	2700	2390	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W03	2700	2350	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W01	2700	2415	Sliding	45	S	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*
Kitchen/Living	ALM-004-01 A	W02	2700	2350	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W05	2700	2305	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	593	S	4901	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3154	S	3443	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	212	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	S	4901	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	106	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2833	S	3443	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2967	S	4901	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3620	E	3119	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	58.3	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	0.5	0.00
INT-PB	Internal Plasterboard Stud Wall	58.7	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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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.
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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).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-4ZUE82-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0209, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	70.5	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	74.6	56 - Mascot AMO
Garage	0.0	



Accredited assessor

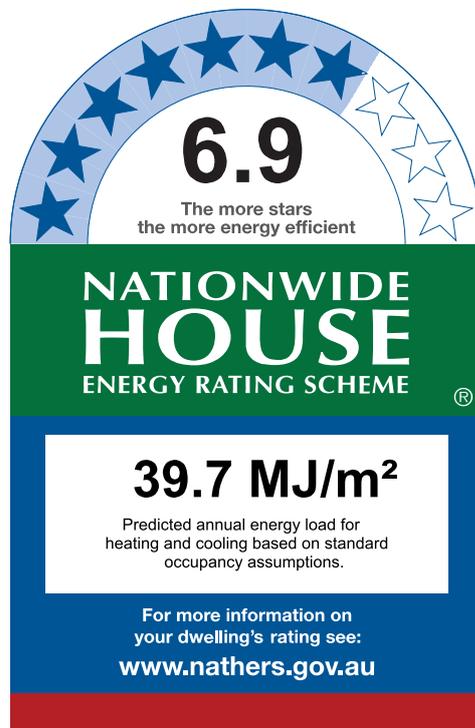
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
23.5	16.2
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-4ZUE82-01>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07	2700	2350	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W06	2700	2415	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W08	2700	3110	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3048	S	3443	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	S	3443	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Ensuite	HEBEL-100-REFL-CAV1	2740	63	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	297	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	N	2788	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	9.2	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	73.3	2.00
INT-PB	Internal Plasterboard Stud Wall	50.6	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	4.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.9	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.2	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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

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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-H91DZS-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0210, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 44.6	Suburban
Unconditioned* 5.8	NatHERS climate zone
Total 50.4	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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7.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

37.1 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
16.7	20.4
MJ/m ²	MJ/m ²

About the rating

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

Windows

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

Apartment entrance doors

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

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

Provisional* values

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	1395	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	1505	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	2330	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3069	N	3001	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2709	E	2915	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	85	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	276	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3577	W	4196	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	8.7	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	40.2	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	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	5.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	24.3	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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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-BB3MEA-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0211, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 47.4	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 51.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

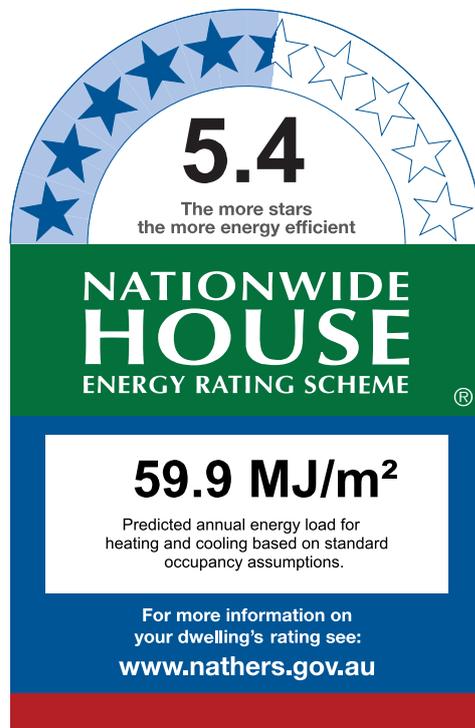
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
33.0	26.8
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-BB3MEA-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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.60	0.41	0.39	0.43

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Berroom 01	ALM-002-01 A	W03	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-04 A	W01	2700	1480	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-04 A	W02	2700	3600	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Berroom 01	HEBEL-100-REFL-CAV1	2740	2308	N	4387	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3598	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5377	E	2198	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4975	W	3238	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	47.2	2.00
INT-PB	Internal Plasterboard Stud Wall	30.0	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	3.8	N/A	0.00	Tile
Berroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.5	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.7	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Berroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.
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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).
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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5WOU9V-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address E0212, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	61.6	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	65.9	56 - Mascot AMO
Garage	0.0	



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

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
9.0	15.7
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

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

Provisional* values

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	845	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	2690	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1778	W	3819	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3832	N	2354	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2033	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	319	E		Yes
Study	HEBEL-100-REFL-CAV1	2740	318	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	81.8	2.00
INT-PB	Internal Plasterboard Stud Wall	38.1	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	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-FZ30EF-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0301, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 47.7	Suburban
Unconditioned* 8.5	NatHERS climate zone
Total 56.2	56 - Mascot AMO
Garage 0.0	



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

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.

8.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

18.2 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
2.4	15.8
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-FZ30EF-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	845	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	2690	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1778	W	3807	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	305	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3749	N	2341	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2033	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	319	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	310	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	318	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	73.0	2.00
INT-PB	Internal Plasterboard Stud Wall	20.2	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	8.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-6NXU71-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0302, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	70.2	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	73.9	56 - Mascot AMO
Garage	0.0	



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

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.

8.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

24.2 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
10.4	13.9
MJ/m ²	MJ/m ²

About the rating

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Verification

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Certificate Check

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04	2700	1200	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W03	2700	1885	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	1100	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W01	2700	1545	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	14	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	5118	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1564	W	3821	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3612	W	2199	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1508	N	1623	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1998	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1597	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2192	N	5349	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2404	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	382	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	53.4	2.00
INT-PB	Internal Plasterboard Stud Wall	42.9	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-GBWI9N-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0303, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	72.0	Suburban
Unconditioned*	3.7	NatHERS climate zone
Total	75.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

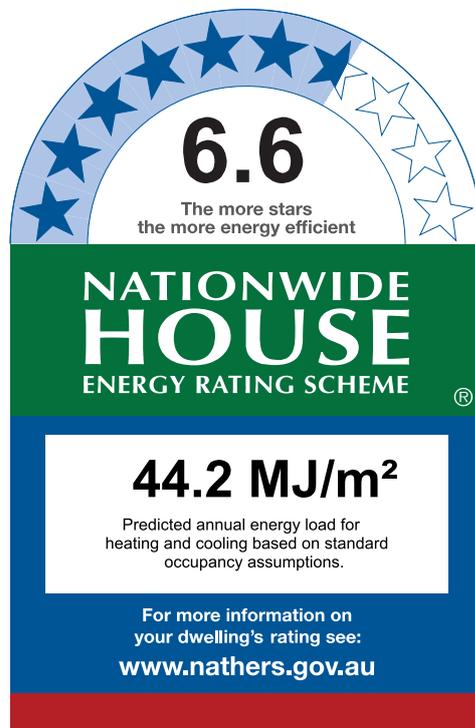
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
27.3	16.9
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-GBWI9N-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	1505	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W04	2700	2645	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	2475	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02	2700	1046	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	12	S		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4664	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2965	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	E	3327	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1605	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3344	S	3745	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3983	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	66.1	2.00
INT-PB	Internal Plasterboard Stud Wall	46.2	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	3.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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) licenced 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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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-9BBQVD-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0304, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 61.7	Suburban
Unconditioned* 4.0	NatHERS climate zone
Total 65.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

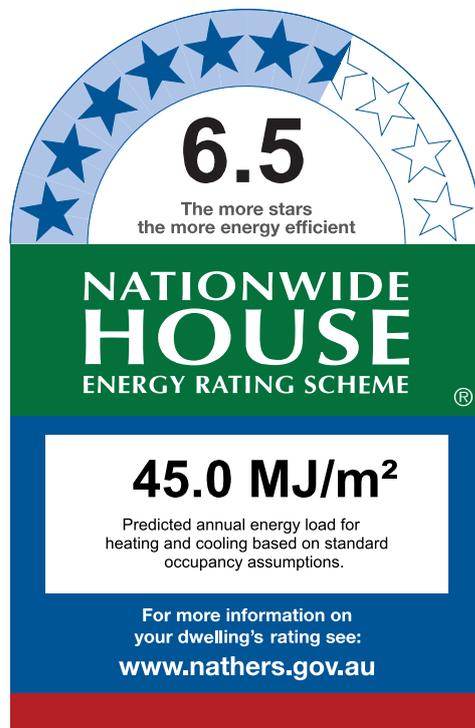
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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Thermal Performance

Heating	Cooling
22.3	22.6
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05	2700	1080	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W04	2700	740	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	2245	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02	2700	1800	Sliding	45	S	None
Study	ALM-002-01 A	W03	2700	740	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4699	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1164	E	6142	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3599	E		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2201	S	4365	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3344	N	3984	Yes
Study	Hebel-75-REFL-CAV-RND	2740	3048	E	2183	Yes
Study	Hebel-75-REFL-CAV-RND	2740	3874	S	1211	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	39.6	2.00
INT-PB	Internal Plasterboard Stud Wall	40.4	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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.4	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof Colour
None			

* 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

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Australian Capital Territory (ACT) licenced 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

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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-KGUY7-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0305, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.3	Suburban
Unconditioned* 4.0	NatHERS climate zone
Total 49.3	56 - Mascot AMO
Garage 0.0	



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

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.

7.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

34.4 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
13.8	20.6
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-KGUY7-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	2245	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	1878	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3853	N	2682	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3175	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6901	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2329	E	3940	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	42.8	2.00
INT-PB	Internal Plasterboard Stud Wall	28.6	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.4	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I5757C-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0306, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 73.7	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 77.5	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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5.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

53.7 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
37.8	15.9
MJ/m ²	MJ/m ²

About the rating

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Verification

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

Windows

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

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-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.60	0.41	0.39	0.43

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-04 A	W04	2700	2900	Sliding	45	S	None
Bedroom 02	ALM-002-04 A	W03	2700	2390	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W01	2700	3240	Sliding	45	S	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*
Kitchen/Living	ALM-002-04 A	W02	2700	1060	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W05	2700	1440	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3598	S	1838	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S	1838	Yes
Entry	Hebel-75-REFL-CAV-RND	2740	361	N		Yes
Entry	Hebel-75-REFL-CAV-RND	2740	250	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5588	S	2835	No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	910	E	5571	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2710	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3903	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	73.3	2.00
INT-PB	Internal Plasterboard Stud Wall	47.4	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	3.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5DFB0W-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0307, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 66.2	Suburban
Unconditioned* 6.0	NatHERS climate zone
Total 72.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

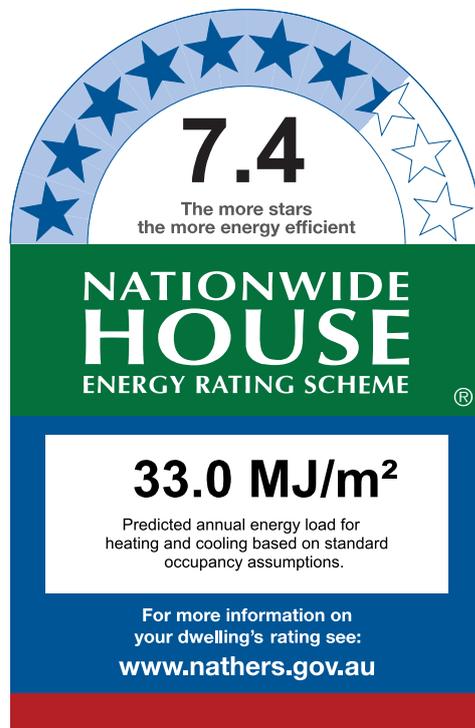
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
16.3	16.7
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-5DFB0W-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	890	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01	2700	3195	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1630	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	43	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	106	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3598	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1503	W	4029	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	S	3436	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	125	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	107	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.3	2.00
INT-PB	Internal Plasterboard Stud Wall	52.1	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	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-Z6SLH9-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0308, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 70.4	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 74.3	56 - Mascot AMO
Garage 0.0	



Accredited assessor

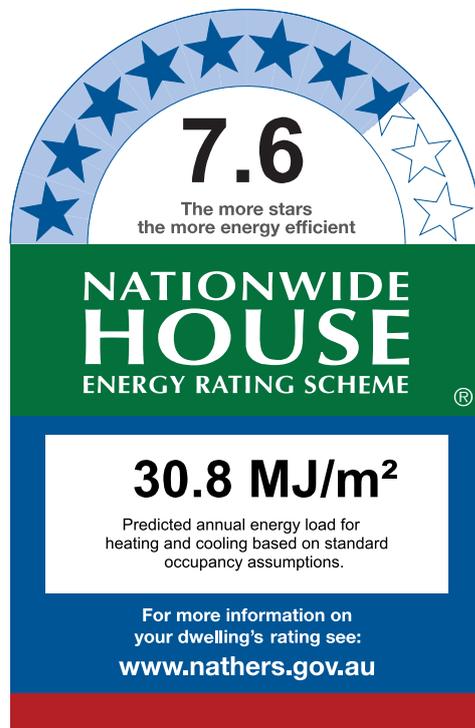
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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



Thermal Performance

Heating	Cooling
13.5	17.3
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	910	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02	2700	1480	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03	2700	3240	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1715	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1461	E	3981	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	S	3436	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.1	2.00
INT-PB	Internal Plasterboard Stud Wall	46.7	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.4	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.3	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-N3WP8H-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0309, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 68.9	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 76.9	56 - Mascot AMO
Garage 0.0	



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

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.

8.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

18.7 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
5.1	13.6
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-N3WP8H-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1375	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W08	2700	3110	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1567	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	61	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1374	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3090	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	297	N		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4000	N	2776	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	318	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	92.2	2.00
INT-PB	Internal Plasterboard Stud Wall	50.2	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	8.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.7	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	200	Sealed
Bathroom	2	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 02	2	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5J6R7Z-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0310, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 44.6	Suburban
Unconditioned* 5.8	NatHERS climate zone
Total 50.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

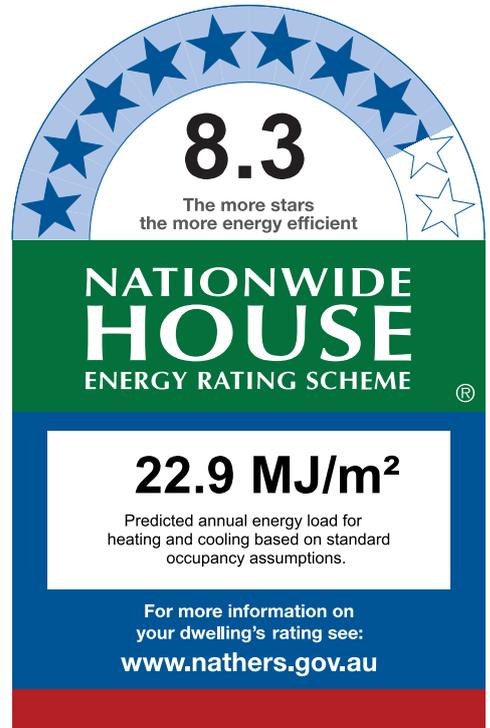
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
6.1	16.8
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	1395	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	1505	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	2330	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	306	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3069	N	2989	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3599	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2709	E	2903	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	85	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	276	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3577	W	4184	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	49.2	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	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	5.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	24.3	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-739JT6-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0311, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 48.8	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 52.6	56 - Mascot AMO
Garage 0.0	



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

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.

7.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

34.5 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
12.7	21.8
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-739JT6-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	2263	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3600	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2308	N	4375	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5377	E	2186	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4975	W	3226	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	124	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	147	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	320	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	320	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	47.3	2.00
INT-PB	Internal Plasterboard Stud Wall	22.5	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	3.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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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-TYZCTL-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0401, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 47.7	Suburban
Unconditioned* 8.5	NatHERS climate zone
Total 56.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

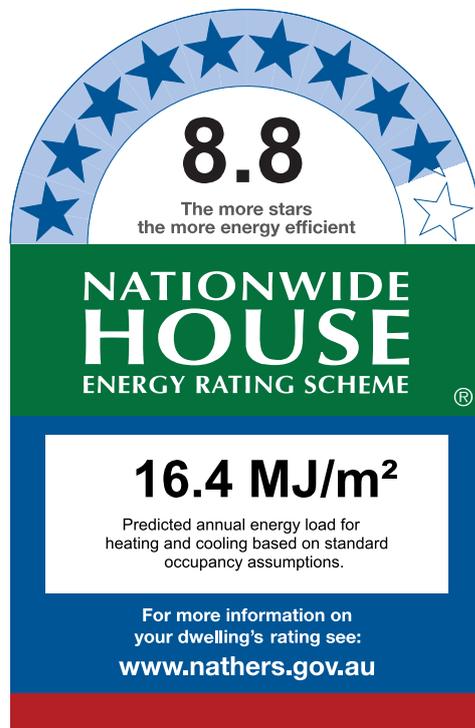
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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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
1.0	15.4
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-i	2700	845	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01-i	2700	2690	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1778	W	3807	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	305	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3749	N	2341	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2033	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	319	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	310	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	318	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	73.0	2.00
INT-PB	Internal Plasterboard Stud Wall	20.2	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	8.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Australian Capital Territory (ACT) licenced 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

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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-1KC90Y-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0402, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 70.2	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 73.9	56 - Mascot AMO
Garage 0.0	



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.4 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
6.6	26.8
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-1KC90Y-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04-g	2700	1200	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W03-l	2700	1885	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-o	2700	1100	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W01-o	2700	1545	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	14	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	5118	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1564	W	3821	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3612	W	2199	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1508	N	1623	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1998	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2192	N	5350	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	382	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	53.4	2.00
INT-PB	Internal Plasterboard Stud Wall	42.9	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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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-5KBEAK-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0403, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	72.0	Suburban
Unconditioned*	3.7	NatHERS climate zone
Total	75.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

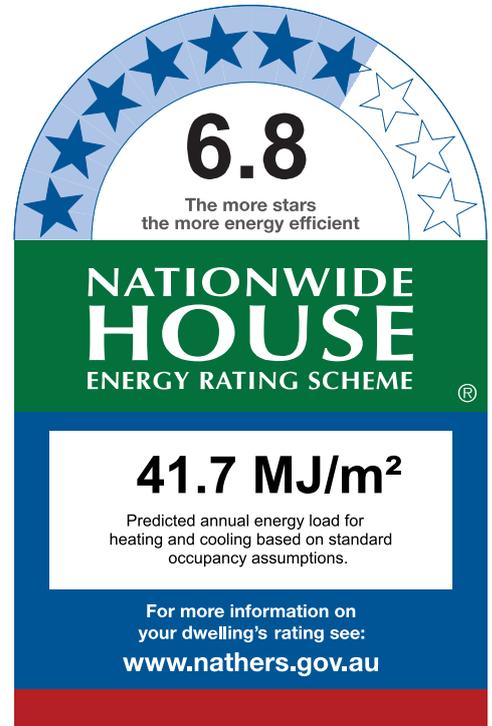
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
22.0	19.8
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-5KBEAK-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-q	2700	1505	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W04-h	2700	2645	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-n	2700	2475	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02-q	2700	1046	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	12	S		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4664	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2965	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	E	3327	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1605	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3344	S	3745	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3983	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	66.1	2.00
INT-PB	Internal Plasterboard Stud Wall	46.2	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	3.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.



Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-VS1IJC-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0404, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 61.7	Suburban
Unconditioned* 4.0	NatHERS climate zone
Total 65.7	56 - Mascot AMO
Garage 0.0	



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

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.

6.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

47.8 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
27.3	20.5
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-VS1IJC-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-b	2700	1080	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W04-d	2700	740	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01-d	2700	2245	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02-d	2700	1800	Sliding	45	S	None
Study	ALM-002-01 A	W03-d	2700	740	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4699	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1164	E	6142	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3599	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2201	S	4365	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3344	N	3984	Yes
Study	Hebel-75-REFL-CAV-RND	2740	3048	E	2182	Yes
Study	Hebel-75-REFL-CAV-RND	2740	3874	S	1211	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	39.6	2.00
INT-PB	Internal Plasterboard Stud Wall	40.4	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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.4	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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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.
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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-Z5A04B-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0405, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.3	Suburban
Unconditioned* 4.0	NatHERS climate zone
Total 49.3	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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7.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

34.7 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
13.6	21.1
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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

Ceiling penetrations*

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

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-g	2700	2245	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01-g	2700	1878	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3853	N	2682	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3175	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6901	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2329	E	3940	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	42.8	2.00
INT-PB	Internal Plasterboard Stud Wall	28.6	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.4	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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

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Australian Capital Territory (ACT) licenced 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

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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-NC9P95-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0406, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	73.7	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	77.5	56 - Mascot AMO
Garage	0.0	



Accredited assessor

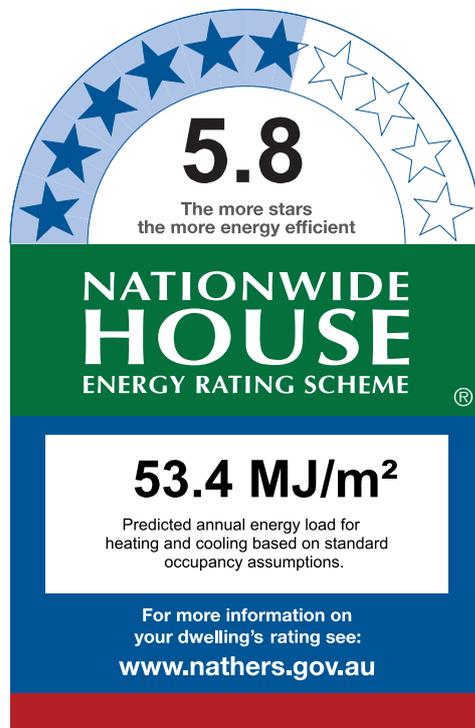
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
37.7	15.7
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-NC9P95-02>. 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-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.60	0.41	0.39	0.43

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-04 A	W04-b	2700	2900	Sliding	45	S	None
Bedroom 02	ALM-002-04 A	W03-b	2700	2390	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W01-b	2700	3240	Sliding	45	S	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*
Kitchen/Living	ALM-002-04 A	W02-b	2700	1060	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W05-a	2700	1440	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3598	S	1838	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S	1838	Yes
Entry	Hebel-75-REFL-CAV-RND	2740	361	N		Yes
Entry	Hebel-75-REFL-CAV-RND	2740	250	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5588	S	2835	No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	910	E	5571	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2710	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3903	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	73.3	2.00
INT-PB	Internal Plasterboard Stud Wall	47.4	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	3.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.



Explanatory Notes

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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.
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-A6ZCGZ-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0407, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 66.2	Suburban
Unconditioned* 6.0	NatHERS climate zone
Total 72.2	56 - Mascot AMO
Garage 0.0	



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

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.

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

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.1 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
16.7	16.3
MJ/m ²	MJ/m ²

About the rating

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Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-A6ZCGZ-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-f	2700	890	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02-f	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-f	2700	3195	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1630	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	43	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	106	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3598	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1503	W	4028	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	S	3436	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	125	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	107	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.3	2.00
INT-PB	Internal Plasterboard Stud Wall	52.1	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	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-LNDT7F-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0408, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	70.4	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	74.3	56 - Mascot AMO
Garage	0.0	



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

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.

7.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

30.0 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
14.9	15.2
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.

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-e	2700	910	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02-e	2700	1480	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03-e	2700	3240	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1715	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1461	E	3982	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	S	3436	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.1	2.00
INT-PB	Internal Plasterboard Stud Wall	46.7	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.4	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.3	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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.
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-DZKGZV-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0409, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 68.9	Suburban
Unconditioned* 8.0	NatHERS climate zone
Total 76.9	56 - Mascot AMO
Garage 0.0	



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

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.

8.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

18.6 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
4.8	13.7
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-DZKGZV-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-k	2700	1375	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01-k	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W08-a	2700	3110	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1567	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	61	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1374	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3090	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	297	N		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4000	N	2776	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	318	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	92.2	2.00
INT-PB	Internal Plasterboard Stud Wall	50.2	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	8.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.7	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	200	Sealed
Bathroom	2	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 02	2	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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) licenced 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.

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-C7SPLU-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0410, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 44.6	Suburban
Unconditioned* 5.8	NatHERS climate zone
Total 50.4	56 - Mascot AMO
Garage 0.0	



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

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.

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

8.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

21.2 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
4.2	16.9
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-j	2700	1395	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03-h	2700	1505	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-j	2700	2330	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	306	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3069	N	2989	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3599	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2709	E	2902	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	85	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	276	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3577	W	4184	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	49.2	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	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	5.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	24.3	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-KES7H3-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0411, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 48.8	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 52.6	56 - Mascot AMO
Garage 0.0	



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

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.

7.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

32.0 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
8.5	23.5
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

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-m	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01-p	2700	2263	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-p	2700	3600	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2308	N	4375	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5377	E	2186	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4975	W	3226	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	124	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	147	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	320	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	320	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	47.3	2.00
INT-PB	Internal Plasterboard Stud Wall	22.5	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	3.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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

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Disclaimer

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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-LIAPAI-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0501, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	47.7	Open
Unconditioned*	8.5	NatHERS climate zone
Total	56.2	56 - Mascot AMO
Garage	0.0	



Accredited assessor

Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
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8.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

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

For more information on your dwelling's rating see:
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Thermal Performance

Heating	Cooling
5.7	12.2
MJ/m ²	MJ/m ²

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-i-a	2700	845	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01-i-a	2700	2690	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1778	W	3807	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	305	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3749	N	2341	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2033	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	319	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	310	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	318	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	73.0	2.00
INT-PB	Internal Plasterboard Stud Wall	20.2	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	8.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-THXYIY-02

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Property

Address E0502, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 70.2	Open
Unconditioned* 3.8	NatHERS climate zone
Total 73.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

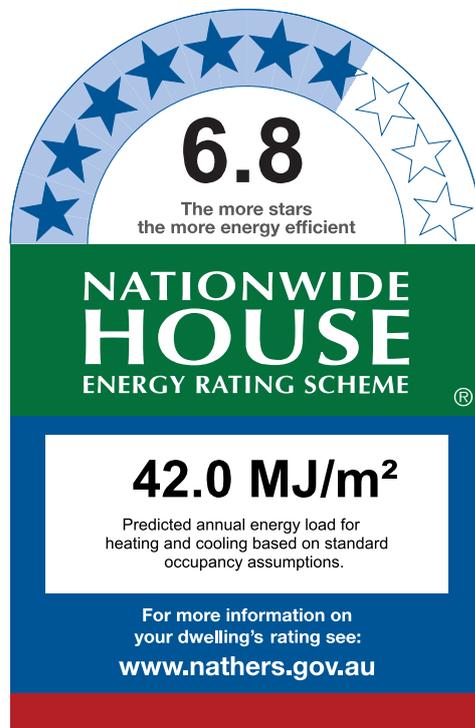
Name Duncan Hope
Business name Senica Consultancy Group
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Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
18.8	23.2
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-THXYIY-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04-g-a	2700	1200	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W03-l-a	2700	1885	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-o-a	2700	1100	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W01-o-a	2700	1545	Sliding	45	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
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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	14	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	5118	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1564	W	3821	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3612	W	2199	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1508	N	1623	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1998	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2192	N	5350	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	382	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	53.4	2.00
INT-PB	Internal Plasterboard Stud Wall	42.9	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.6	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

* Refer to glossary.

Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-U5213P-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0503, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 72.0	Open
Unconditioned* 3.7	NatHERS climate zone
Total 75.7	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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5.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

54.0 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
37.8	16.2
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-q-a	2700	1505	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W04-h-a	2700	2645	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-n-a	2700	2475	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02-q-a	2700	1046	Sliding	45	E	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	12	S		No
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4664	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2965	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	E	3327	Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1605	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3344	S	3745	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3983	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	66.1	2.00
INT-PB	Internal Plasterboard Stud Wall	46.2	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	3.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.9	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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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-PT5VZY-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0504, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 61.7	Open
Unconditioned* 4.0	NatHERS climate zone
Total 65.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

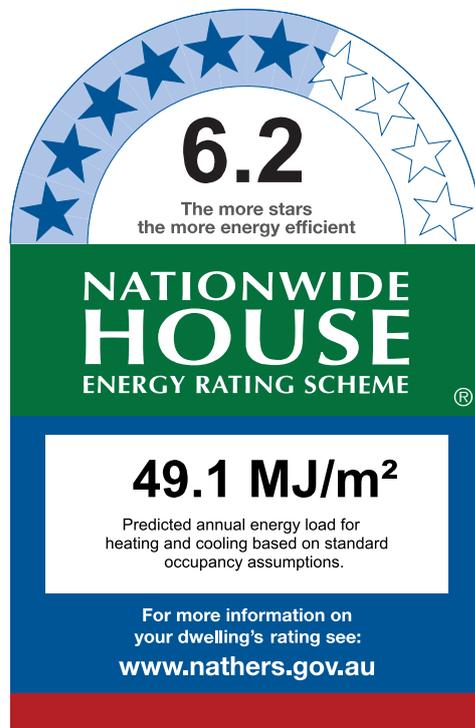
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
34.0	15.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-PT5VZY-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-b-a	2700	1080	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W04-d-a	2700	740	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01-d-a	2700	2245	Sliding	45	E	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*
Kitchen/Living	ALM-002-01 A	W02-d-a	2700	1800	Sliding	45	S	None
Study	ALM-002-01 A	W03-d-a	2700	740	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4699	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1164	E	6142	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3599	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2201	S	4365	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3344	N	3984	Yes
Study	Hebel-75-REFL-CAV-RND	2740	3048	E	2182	Yes
Study	Hebel-75-REFL-CAV-RND	2740	3874	S	1211	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	39.6	2.00
INT-PB	Internal Plasterboard Stud Wall	40.4	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	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.4	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	2	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-9LGBDD-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0505, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.3	Open
Unconditioned* 4.0	NatHERS climate zone
Total 49.3	56 - Mascot AMO
Garage 0.0	



Accredited assessor

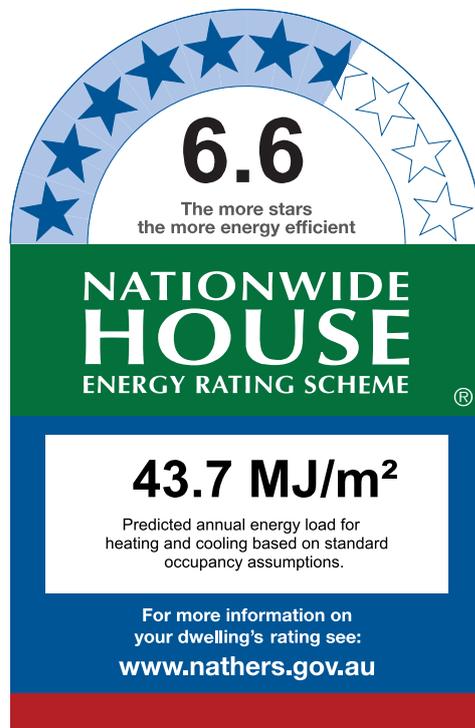
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
15.8	27.8
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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-g-a	2700	2245	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01-g-a	2700	1878	Sliding	45	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3853	N	2682	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3175	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6901	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2329	E	3940	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	42.8	2.00
INT-PB	Internal Plasterboard Stud Wall	28.6	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.4	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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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-D6KTNQ-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0506, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 73.7	Open
Unconditioned* 3.8	NatHERS climate zone
Total 77.5	56 - Mascot AMO
Garage 0.0	



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

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.

6.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

42.7 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
27.5	15.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-D6KTNQ-02>. 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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W04-b-a	2700	2900	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W03-b-a	2700	2390	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W01-b-a	2700	3240	Sliding	45	S	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*
Kitchen/Living	ALM-004-01 A	W02-b-a	2700	1060	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W05-a-a	2700	1440	Sliding	45	E	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3598	S	1838	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S	1838	Yes
Entry	Hebel-75-REFL-CAV-RND	2740	361	N		Yes
Entry	Hebel-75-REFL-CAV-RND	2740	250	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5588	S	2835	No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	910	E	5571	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2710	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3903	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	73.3	2.00
INT-PB	Internal Plasterboard Stud Wall	47.4	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	3.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-D4QRU2-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0507, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 66.2	Open
Unconditioned* 6.0	NatHERS climate zone
Total 72.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

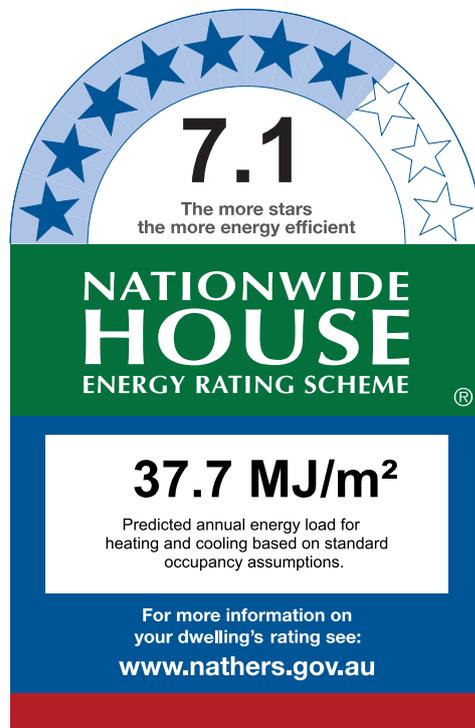
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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



Thermal Performance

Heating	Cooling
22.9	14.8
MJ/m ²	MJ/m ²

About the rating

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-f-a	2700	890	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02-f-a	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-f-a	2700	3195	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1630	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	43	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	106	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3598	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1503	W	4028	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	S	3436	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	125	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	107	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.3	2.00
INT-PB	Internal Plasterboard Stud Wall	52.1	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	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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



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) licenced assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-TLN-SPC-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0508, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 70.4	Open
Unconditioned* 3.9	NatHERS climate zone
Total 74.3	56 - Mascot AMO
Garage 0.0	



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.8 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
20.7	13.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-TLN-SPC-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-e-a	2700	910	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02-e-a	2700	1480	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03-e-a	2700	3240	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1715	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1461	E	3982	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	S	3436	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.1	2.00
INT-PB	Internal Plasterboard Stud Wall	46.7	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.4	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.3	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.



Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-KKURX1-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0509, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 68.9	Open
Unconditioned* 8.0	NatHERS climate zone
Total 76.9	56 - Mascot AMO
Garage 0.0	



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

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.

8.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

19.8 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
7.7	12.2
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-KKURX1-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-k-a	2700	1375	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01-k-a	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W08-a-a	2700	3110	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1567	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	61	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1374	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3090	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	297	N		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4000	N	2776	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	318	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	92.2	2.00
INT-PB	Internal Plasterboard Stud Wall	50.2	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	8.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.7	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	200	Sealed
Bathroom	2	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 02	2	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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

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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.

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-GTE0SP-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0510, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 44.6	Open
Unconditioned* 5.8	NatHERS climate zone
Total 50.4	56 - Mascot AMO
Garage 0.0	



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

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.

8.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

21.7 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
7.4	14.3
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-GTE0SP-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-j-a	2700	1395	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03-h-a	2700	1505	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-j-a	2700	2330	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	306	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3069	N	2989	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3599	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2709	E	2902	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	85	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	276	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3577	W	4184	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	49.2	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	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	5.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	24.3	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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



Explanatory Notes

About this report

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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.
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National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-F5HTUK-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0511, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 48.8	Open
Unconditioned* 3.8	NatHERS climate zone
Total 52.6	56 - Mascot AMO
Garage 0.0	



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.5 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
12.9	20.7
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

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-m-a	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01-p-a	2700	2263	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-p-a	2700	3600	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2308	N	4375	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5377	E	2186	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4975	W	3226	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	124	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	147	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	320	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	320	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	47.3	2.00
INT-PB	Internal Plasterboard Stud Wall	22.5	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	3.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Australian Capital Territory (ACT) licenced 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

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).

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Disclaimer

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-2R2THB-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0601, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 91.3	Open
Unconditioned* 5.3	NatHERS climate zone
Total 96.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

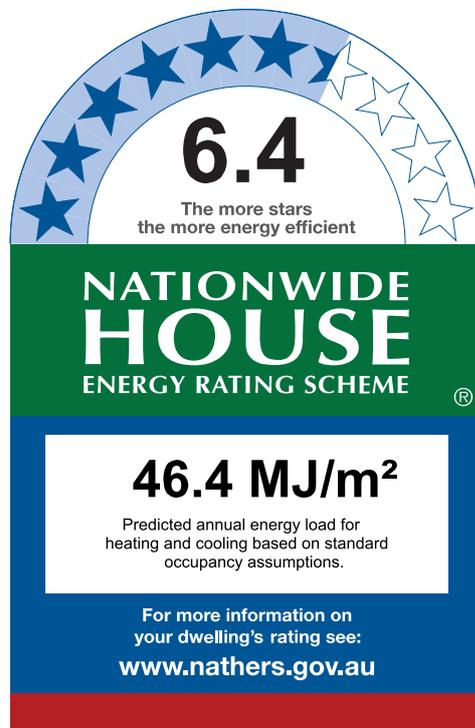
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
31.3	15.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-2R2THB-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W01	2700	2540	Sliding	45	N	None
Bedroom 02	ALM-004-01 A	W06	2700	1385	Sliding	45	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*
Bedroom 03	ALM-004-01 A	W03	2700	1630	Sliding	45	N	None
Bedroom 03	ALM-004-01 A	W04	2700	2244	Sliding	45	E	None
Entry	ALM-002-01 A	W07	2700	900	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W02	2700	3900	Sliding	45	N	None
Study	ALM-004-01 A	W05	2700	900	Sliding	45	E	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 04	0	593	1503	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3598	N	3125	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2963	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	4001	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	4001	N	3125	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3006	E		Yes
Entry	Hebel-75-REFL-CAV-RND	2740	2011	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4953	N	3125	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4953	S		Yes
Study	Hebel-75-REFL-CAV-RND	2740	1673	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	24.6	2.00
INT-PB	Internal Plasterboard Stud Wall	78.9	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	5.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-CCGSUP-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0602, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.3	Open
Unconditioned* 4.0	NatHERS climate zone
Total 49.3	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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6.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

49.3 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
20.7	28.6
MJ/m ²	MJ/m ²

About the rating

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W02-g-a-a	2700	2245	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01-g-a-a	2700	1878	Sliding	45	E	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 03	0	541	1300	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3853	N	2682	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3175	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6901	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2329	E	3940	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	42.8	2.00
INT-PB	Internal Plasterboard Stud Wall	28.6	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.4	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-94JKLL-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0603, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	74.7 Open
Unconditioned*	3.8 NatHERS climate zone
Total	78.6 56 - Mascot AMO
Garage	0.0



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

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.

5.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

53.6 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
39.0	14.6
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-94JKLL-02>. 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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W04-b-a-a	2700	2900	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W03-b-a-a	2700	2390	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W01-b-a-a	2700	3598	Sliding	45	S	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*
Kitchen/Living	ALM-004-01 A	W02-b-a-a	2700	1060	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W05-a-a-a	2700	1440	Sliding	45	E	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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 02	0	593	1482	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3598	S	1838	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S	1838	Yes
Entry	Hebel-75-REFL-CAV-RND	2740	361	N		Yes
Entry	Hebel-75-REFL-CAV-RND	2740	250	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5588	S	2659	No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	734	E	5571	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	2710	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4079	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	73.5	2.00
INT-PB	Internal Plasterboard Stud Wall	47.4	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.0	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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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-T9FDLX-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0604, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 66.2	Open
Unconditioned* 6.0	NatHERS climate zone
Total 72.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

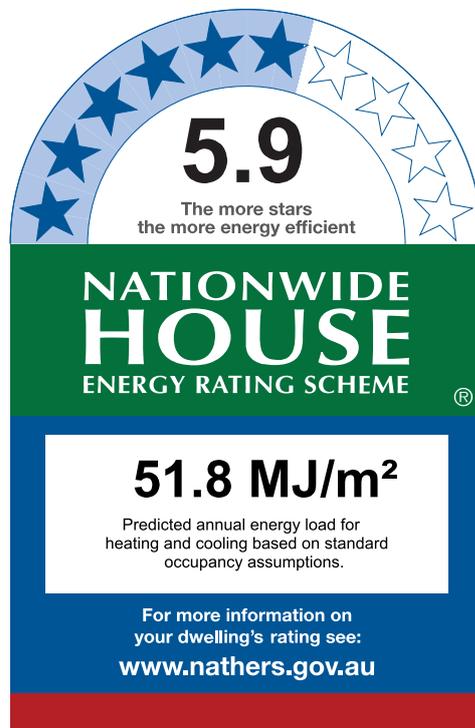
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
34.9	16.9
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-T9FDLX-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-f-a-a	2700	890	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02-f-a-a	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-f-a-a	2700	3195	Sliding	45	S	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 01	0	614	1503	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1630	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	43	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	106	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3598	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1503	W	4028	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	S	3436	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	125	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	107	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.4	2.00
INT-PB	Internal Plasterboard Stud Wall	52.1	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	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-FZZ2CE-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0605, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	70.4	Open
Unconditioned*	3.9	NatHERS climate zone
Total	74.3	56 - Mascot AMO
Garage	0.0	



Accredited assessor

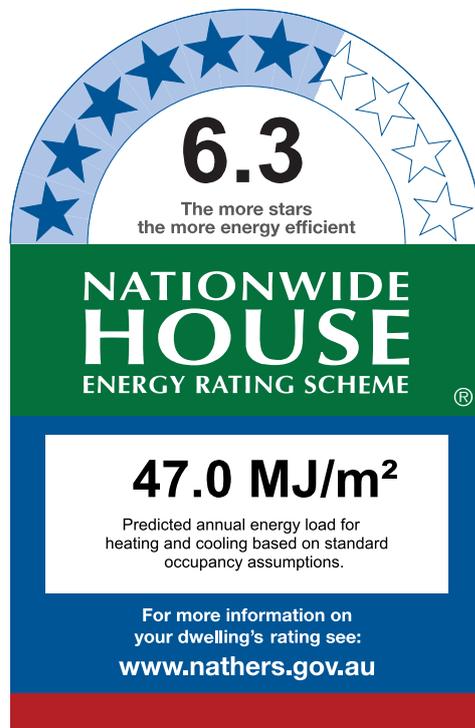
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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

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

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Thermal Performance

Heating	Cooling
33.5	13.5
MJ/m ²	MJ/m ²

About the rating

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* Refer to glossary.

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

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

Provisional* values

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-e-a-a	2700	910	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02-e-a-a	2700	1480	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03-e-a-a	2700	3240	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1715	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	S		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1461	E	3982	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	S	3436	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.3	2.00
INT-PB	Internal Plasterboard Stud Wall	46.7	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.4	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.3	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

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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-L41K3-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0606, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 68.9	Open
Unconditioned* 8.0	NatHERS climate zone
Total 76.9	56 - Mascot AMO
Garage 0.0	



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

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.

8.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

24.1 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
12.2	11.9
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-L41K3-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-k-a-a	2700	1375	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01-k-a-a	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W08-a-a-a	2700	3110	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1567	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	61	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1374	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3090	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	297	N		No
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4000	N	2776	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	318	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	92.6	2.00
INT-PB	Internal Plasterboard Stud Wall	50.2	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	8.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.7	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	200	Sealed
Bathroom	2	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
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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).
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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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-IBVW9N-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0607, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	44.6	Open
Unconditioned*	5.8	NatHERS climate zone
Total	50.4	56 - Mascot AMO
Garage	0.0	



Accredited assessor

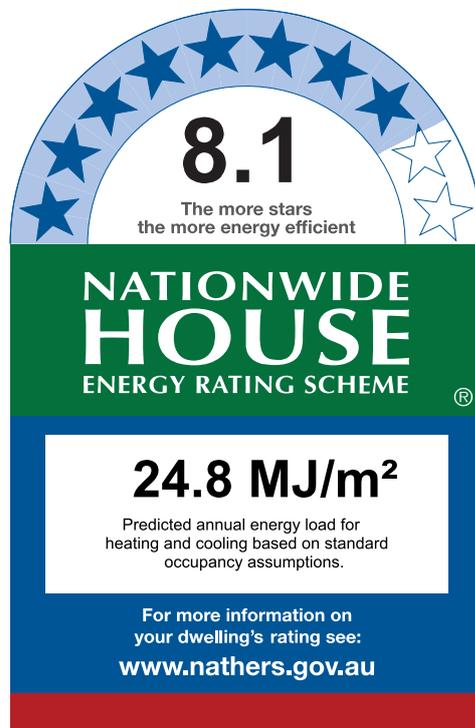
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
11.2	13.6
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-IBVW9N-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01-j-a-a	2700	1395	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03-h-a-a	2700	1505	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-j-a-a	2700	2330	Sliding	45	E	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND-A	2740	306	S		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	3069	N	2989	Yes
Entry	Hebel-75-REFL-CAV-RND-B	2740	353	E		Yes
Entry	Hebel-75-REFL-CAV-RND-B	2740	258	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3599	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	2709	E	2902	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	85	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	276	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3577	W	4184	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	49.2	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	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	5.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	24.3	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.
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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).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-AQ8G2B-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0608, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 48.8	Open
Unconditioned* 3.8	NatHERS climate zone
Total 52.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

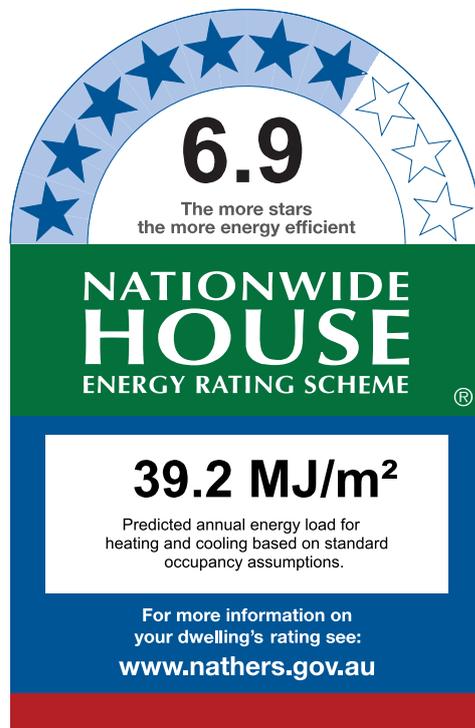
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
18.6	20.6
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-AQ8G2B-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-m-a-a	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01-p-a-a	2700	2263	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-p-a-a	2700	3600	Sliding	45	E	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 06	0	593	1503	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2308	N	4375	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3598	N		Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5377	E	2186	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4975	W	3226	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	124	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	147	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	320	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	320	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	47.5	2.00
INT-PB	Internal Plasterboard Stud Wall	22.5	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	3.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.0	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

* Refer to glossary.

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-QH2DPW-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address E0609, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	47.7	Open
Unconditioned*	9.3	NatHERS climate zone
Total	57.1	56 - Mascot AMO
Garage	0.0	



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

National Construction Code (NCC) requirements

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



Thermal Performance

Heating	Cooling
10.7	13.9
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

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-i-a-a	2700	845	Sliding	45	W	None
Bedroom 01	ALM-002-01 A	W03	2700	1500	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01-i-a-a	2700	2690	Sliding	45	N	None

* Refer to glossary.

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	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 05	0	614	1503	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	1567	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-A	2740	1778	W	3807	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	4626	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	305	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3749	N	2341	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	2033	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	319	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	310	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	318	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	58.1	2.00
INT-PB	Internal Plasterboard Stud Wall	20.2	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	9.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

* Refer to glossary.

Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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-IUOAYR-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0201, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 46.1	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 50.0	56 - Mascot AMO
Garage 0.0	



Accredited assessor

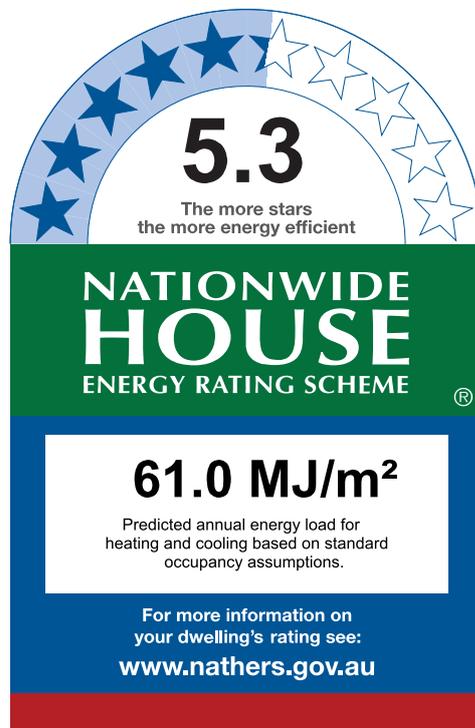
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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



Thermal Performance

Heating	Cooling
35.0	26.0
MJ/m ²	MJ/m ²

About the rating

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Verification

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



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Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1505	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W01	2700	1395	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03	2700	3300	Sliding	45	S	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	3408	S	2641	Yes

* Refer to glossary.



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3281	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	4191	S	2641	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	52.9	2.00
INT-PB	Internal Plasterboard Stud Wall	18.9	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

* Refer to glossary.



Roof type

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

Explanatory Notes

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-X75X64-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0202, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 49.4	Suburban
Unconditioned* 4.4	NatHERS climate zone
Total 53.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

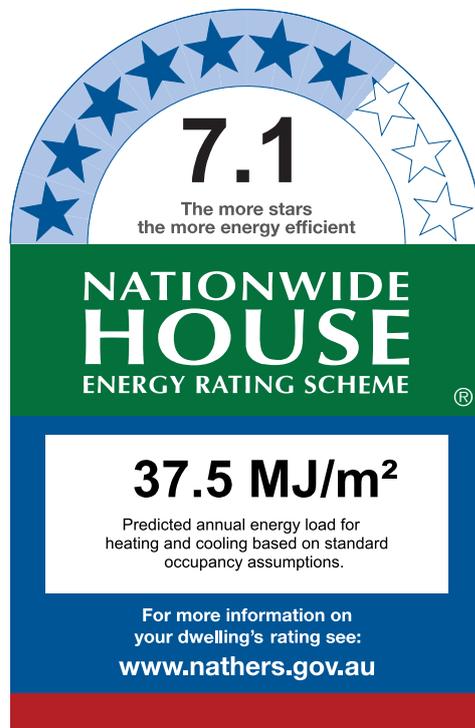
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
14.7	22.8
MJ/m ²	MJ/m ²

About the rating

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* Refer to glossary.

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	2415	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1840	Sliding	45	ENE	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	N	3690	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1990	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3173	ENE	3521	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	35	NNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	72.1	2.00
INT-PB	Internal Plasterboard Stud Wall	27.1	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	4.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.9	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

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Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
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Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-QROVCG-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0301, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 90.3	Suburban
Unconditioned* 5.1	NatHERS climate zone
Total 95.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

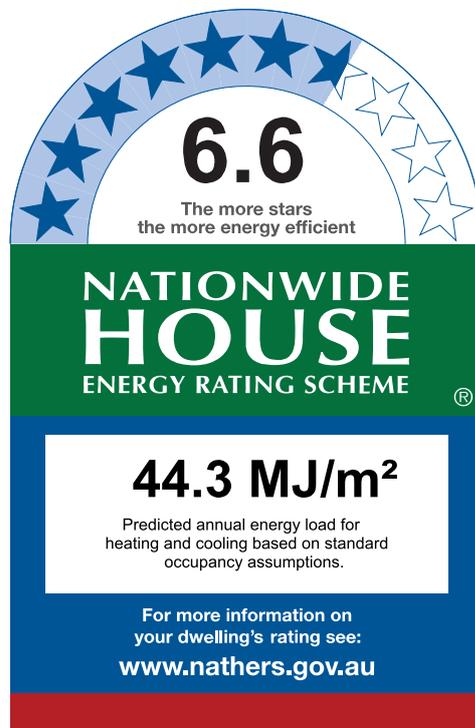
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
29.9	14.4
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-QROVCG-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07	600	900	Awning	90	E	None
Bedroom 01	ALM-002-01 A	W06	2700	600	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W05	2700	1799	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W02	2700	1800	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01	2700	3000	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W03	2700	1500	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04	2700	3000	Sliding	66	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4848	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3303	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2604	W	6901	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2625	W	3709	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3048	E	10101	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3112	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2413	S	3089	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4191	S	2602	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	487	W	2604	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	317	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	78.2	2.00
INT-PB	Internal Plasterboard Stud Wall	62.6	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	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.4	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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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.
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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-6YPWRB-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0302, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 99.3	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 103.2	56 - Mascot AMO
Garage 0.0	



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

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.

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5.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

57.7 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
36.2	21.5
MJ/m ²	MJ/m ²

About the rating

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Verification

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05	2700	1800	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W03	2700	1460	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W04	2700	2815	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W01	2700	5270	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	1500	Awning	30	S	None
Kitchen/Living	ALM-002-01 A	W06	2700	1500	Awning	30	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	S	2665	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3003	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3025	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2685	E	5935	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3040	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5991	W	2690	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3289	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.1	2.00
INT-PB	Internal Plasterboard Stud Wall	64.8	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.9	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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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-VI147K-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0303, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 46.4	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 50.3	56 - Mascot AMO
Garage 0.0	



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

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.

6.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

49.7 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
26.7	23.0
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-VI147K-02>. 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-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.60	0.41	0.39	0.43

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-04 A	W04	2700	1165	Sliding	45	W	None
Kitchen/Living	ALM-001-04 A	W03	2700	3960	Sliding	66	N	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*
Kitchen/Living	ALM-001-04 A	W02	2700	1485	Sliding	45	WNW	None
Kitchen/Living	ALM-001-04 A	W01	2700	1485	Sliding	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2307	W	3427	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4636	N	2255	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1207	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3977	WNW	181	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	656	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.3	2.00
INT-PB	Internal Plasterboard Stud Wall	28.2	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.1	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-1QPVXH-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0304, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.6	Suburban
Unconditioned* 4.2	NatHERS climate zone
Total 49.8	56 - Mascot AMO
Garage 0.0	



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

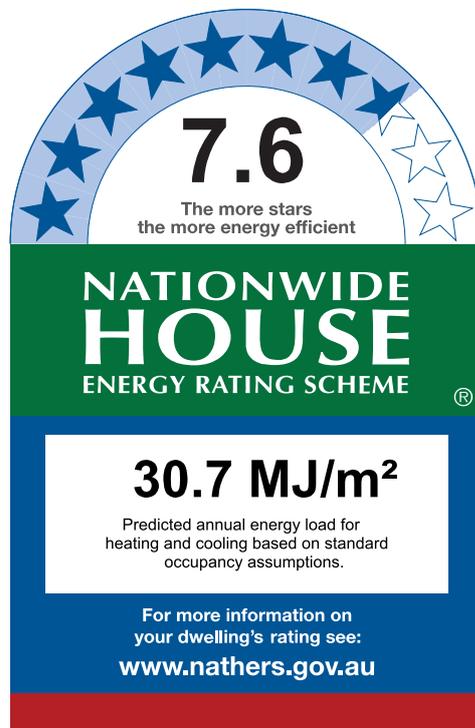
Declaration of interest No Conflict of Interest

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Thermal Performance

Heating	Cooling
10.4	20.3
MJ/m ²	MJ/m ²

About the rating

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* Refer to glossary.

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Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-002-01 A	W03	2700	2100	Sliding	45	W	None
bedroom	ALM-002-01 A	W01	2700	2700	Sliding	45	WNW	None
bedroom	ALM-002-01 A	W02	2700	2700	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	190	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3006	W	2488	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1652	N		Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3342	WNW		Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3599	N	3095	Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3471	S	2840	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	47.7	2.00
INT-PB	Internal Plasterboard Stud Wall	16.3	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	4.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.6	N/A	0.00	Tile
bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bedroom	2	Downlight	200	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.



Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-M55GDX-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0305, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	53.1	Suburban
Unconditioned*	4.7	NatHERS climate zone
Total	57.8	56 - Mascot AMO
Garage	0.0	



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

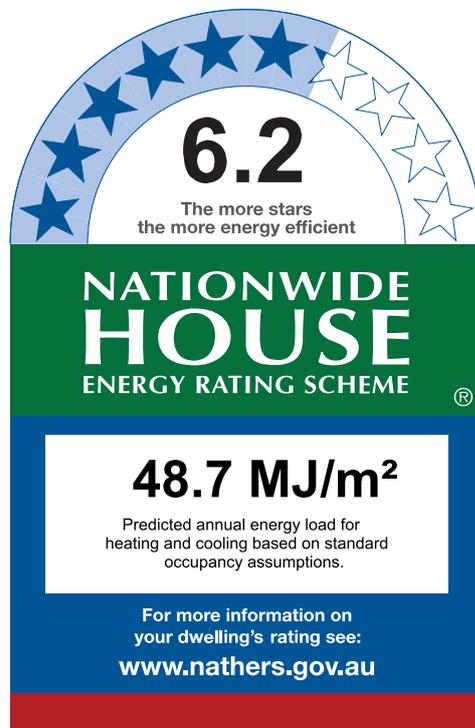
Declaration of interest No Conflict of Interest

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
21.8	26.9
MJ/m ²	MJ/m ²

About the rating

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

Provisional* values

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	2840	Sliding	45	ENE	None
Kitchen/Living	ALM-002-01 A	W02	2700	2880	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3788	NNW		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3032	ENE		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2718	SSE		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	W	2916	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	9661	NNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	64.6	2.00

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	4.7	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.5	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

* Refer to glossary.



Roof type

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

* Refer to glossary.

Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-LPXJHT-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0306, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	80.1	Suburban
Unconditioned*	5.4	NatHERS climate zone
Total	85.6	56 - Mascot AMO
Garage	0.0	



Accredited assessor

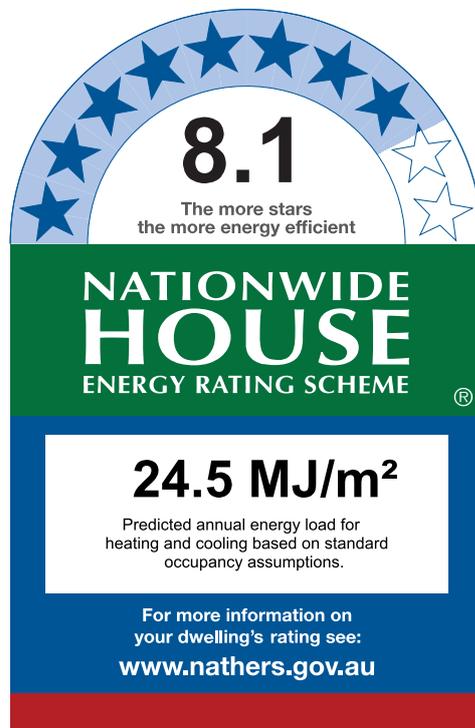
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
7.1	17.4
MJ/m ²	MJ/m ²

About the rating

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1500	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	2100	Sliding	45	ENE	None
Kitchen/Living	ALM-002-01 A	W01	2700	2895	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	2799	NNW		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4318	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3629	NNW		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3421	ENE		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1781	SSE		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	212	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1588	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	328	W		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	1265	NNW		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	212	S		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	127	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3831	W	4140	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5248	NNW		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	328	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	340	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	46.4	2.00
INT-PB	Internal Plasterboard Stud Wall	56.3	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	5.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.8	N/A	0.00	Tile



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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-0MKF9W-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0307, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 82.7	Suburban
Unconditioned* 4.0	NatHERS climate zone
Total 86.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

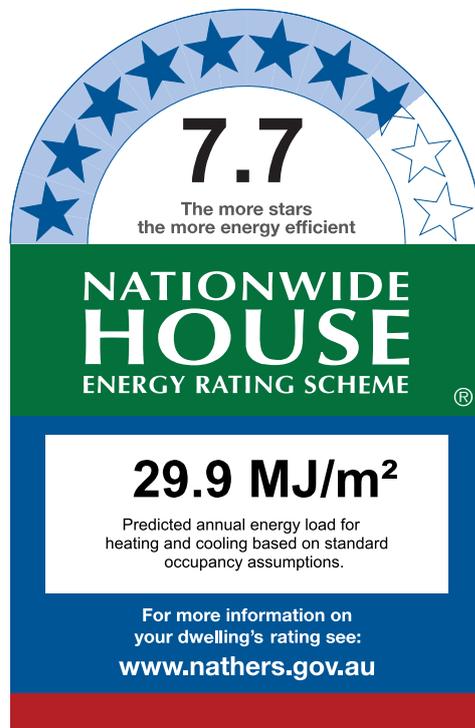
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
9.8	20.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-0MKF9W-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1145	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01	2700	1500	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3365	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Study	ALM-002-01 A	W04	2700	1345	Sliding	45	N	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1693	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3069	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	W		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	2117	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	N	2693	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1439	W		Yes
Study	Hebel-75-REFL-CAV-RND	2740	1884	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	76.4	2.00
INT-PB	Internal Plasterboard Stud Wall	67.1	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-J3JPTB-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0308, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	69.1	Suburban
Unconditioned*	5.5	NatHERS climate zone
Total	74.6	56 - Mascot AMO
Garage	0.0	



Accredited assessor

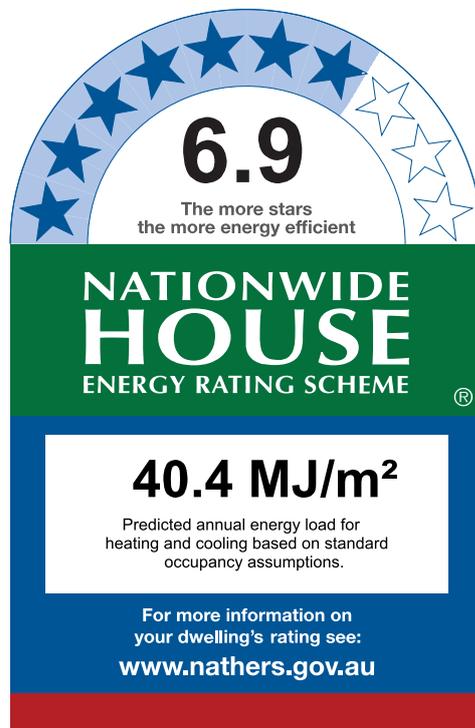
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
21.1	19.3
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-J3JPTB-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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07	2700	2350	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W04	2700	1505	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W05	2700	1505	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W06	2700	2525	Sliding	45	S	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3218	S	1303	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1249	W	5062	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3556	E		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2583	E	7298	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3958	S	2552	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	W		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	112.8	2.00

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	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-PZJ46R-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0401, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 90.3	Suburban
Unconditioned* 5.1	NatHERS climate zone
Total 95.4	56 - Mascot AMO
Garage 0.0	



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

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.

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

6.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

44.5 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
30.5	14.0
MJ/m ²	MJ/m ²

About the rating

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Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-PZJ46R-02>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07-a	600	900	Awning	90	E	None
Bedroom 01	ALM-002-01 A	W06-a	2700	600	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W05-c	2700	1799	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W02-h	2700	1800	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-h	2700	3000	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W03-g	2700	1500	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04-e	2700	3000	Sliding	66	S	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
None				



External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4848	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3303	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2604	W	6901	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2625	W	3710	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3048	E	10101	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3112	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2413	S	3089	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4191	S	2602	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	487	W	2604	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	317	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	78.2	2.00
INT-PB	Internal Plasterboard Stud Wall	62.6	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	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.4	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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-H30PK7-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0402, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 99.3	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 103.2	56 - Mascot AMO
Garage 0.0	



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

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.

5.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

57.9 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
36.6	21.3
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-H30PK7-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-d	2700	1800	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W03-j	2700	1460	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W04-f	2700	2815	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W01-m	2700	5270	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-m	2700	1500	Awning	30	S	None
Kitchen/Living	ALM-002-01 A	W06-b	2700	1500	Awning	30	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	S	2666	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3003	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3025	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2685	E	5935	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5991	W	2690	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6329	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.1	2.00
INT-PB	Internal Plasterboard Stud Wall	64.8	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.9	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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) licenced assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-FGCG8K-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0403, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 46.4	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 50.3	56 - Mascot AMO
Garage 0.0	



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

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.

6.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

49.3 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
26.9	22.4
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-FGCG8K-02>. 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-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.60	0.41	0.39	0.43

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-04 A	W04-a	2700	1165	Sliding	45	W	None
Kitchen/Living	ALM-001-04 A	W03-a	2700	3960	Sliding	66	N	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*
Kitchen/Living	ALM-001-04 A	W02-a	2700	1485	Sliding	45	WNW	None
Kitchen/Living	ALM-001-04 A	W01-a	2700	1485	Sliding	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2307	W	3427	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4636	N	2255	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1863	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3977	WNW	181	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.3	2.00
INT-PB	Internal Plasterboard Stud Wall	28.2	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.1	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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.
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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).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-Q2KM1H-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0404, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	45.6	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	49.8	56 - Mascot AMO
Garage	0.0	



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

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.

7.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

29.5 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
10.2	19.3
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-Q2KM1H-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-002-01 A	W03-k	2700	2100	Sliding	45	W	None
bedroom	ALM-002-01 A	W01-n	2700	2700	Sliding	45	WNW	None
bedroom	ALM-002-01 A	W02-n	2700	2700	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	190	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3006	W	2488	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1652	N		Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3342	WNW		Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3599	N	3096	Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3471	S	2840	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	47.7	2.00
INT-PB	Internal Plasterboard Stud Wall	16.3	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	4.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.6	N/A	0.00	Tile
bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bedroom	2	Downlight	200	Sealed



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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).

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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-5Y0UT4-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0405, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 53.1	Open
Unconditioned* 4.7	NatHERS climate zone
Total 57.8	56 - Mascot AMO
Garage 0.0	



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

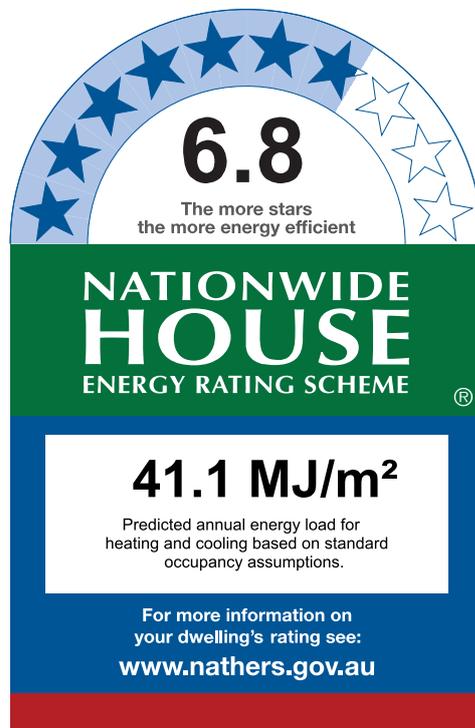
Declaration of interest No Conflict of Interest

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.

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



Thermal Performance

Heating	Cooling
18.0	23.1
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	2840	Sliding	45	ENE	None
Kitchen/Living	ALM-002-01 A	W02	2700	2880	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3788	NNW		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3032	ENE		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2718	SSE		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	W	2916	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	9661	NNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	64.6	2.00

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	4.7	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.5	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

* Refer to glossary.



Roof type

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

Explanatory Notes

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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-EYHR4E-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0406, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 80.1	Suburban
Unconditioned* 5.4	NatHERS climate zone
Total 85.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

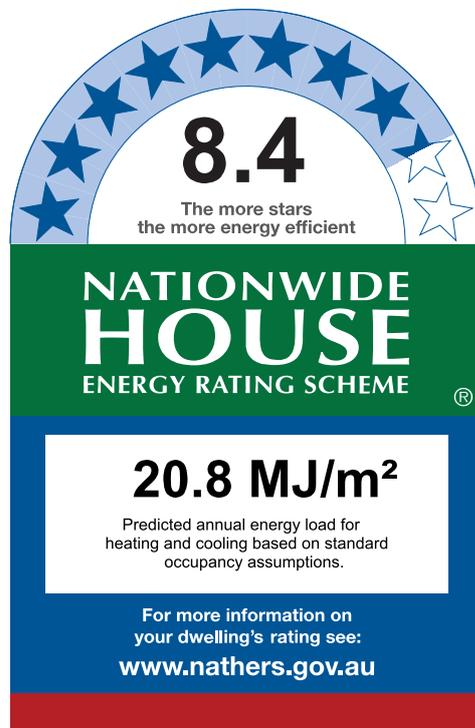
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
3.8	17.0
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-EYHR4E-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-i	2700	1500	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-l	2700	2100	Sliding	45	ENE	None
Kitchen/Living	ALM-002-01 A	W01-l	2700	2895	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	2799	NNW		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4318	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3629	NNW		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3421	ENE		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1781	SSE		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	212	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1588	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	328	W		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	1265	NNW		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	212	S		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	127	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3831	W	4140	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5248	NNW		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	328	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	340	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	46.4	2.00
INT-PB	Internal Plasterboard Stud Wall	56.3	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	5.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.8	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-UXRM44-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0407, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*		Exposure Type
Conditioned*	82.7	Suburban
Unconditioned*	4.0	NatHERS climate zone
Total	86.6	56 - Mascot AMO
Garage	0.0	



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

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
8.3	20.2
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-UXRM44-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-c	2700	1145	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01-c	2700	1500	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-c	2700	3365	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Study	ALM-002-01 A	W04-c	2700	1345	Sliding	45	N	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1693	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3069	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	W		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	2117	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	N	2693	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1439	W		Yes
Study	Hebel-75-REFL-CAV-RND	2740	1884	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	76.4	2.00
INT-PB	Internal Plasterboard Stud Wall	67.1	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-R4JJZO-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0408, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 69.1	Open
Unconditioned* 5.5	NatHERS climate zone
Total 74.6	56 - Mascot AMO
Garage 0.0	



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

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.

6.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

42.2 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
25.6	16.6
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-R4JJZO-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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07	2700	2350	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W04	2700	1505	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W05	2700	1505	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W06	2700	2525	Sliding	45	S	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3218	S	1303	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1249	W	5062	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3556	E		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2583	E	7298	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3958	S	2552	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	W		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	112.8	2.00

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	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-8CQUKL-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0501, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 90.3	Open
Unconditioned* 5.1	NatHERS climate zone
Total 95.4	56 - Mascot AMO
Garage 0.0	



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

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.

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

6.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

49.8 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
37.4	12.3
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

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

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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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07-a-a	600	900	Awning	90	E	None
Bedroom 01	ALM-002-01 A	W06-a-a	2700	600	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W05-c-a	2700	1799	Sliding	45	W	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W02-h-a	2700	1800	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01-h-a	2700	3000	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W03-g-a	2700	1500	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04-e-a	2700	3000	Sliding	66	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4848	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3303	S		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2604	W	6901	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2625	W	3710	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3048	E	10101	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3112	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2413	S	3089	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4191	S	2602	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	487	W	2604	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	317	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	78.2	2.00
INT-PB	Internal Plasterboard Stud Wall	62.6	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	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.4	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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).

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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-16J4QD-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0502, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 99.3	Open
Unconditioned* 3.9	NatHERS climate zone
Total 103.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

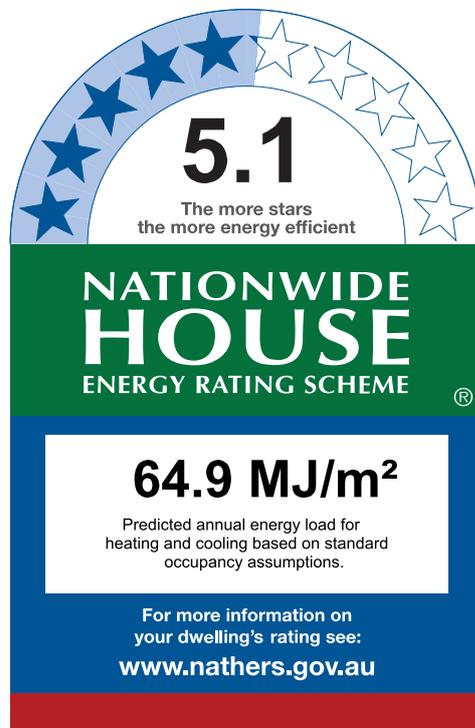
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
44.5	20.4
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-16J4QD-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-d-a	2700	1800	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W03-j-a	2700	1460	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W04-f-a	2700	2815	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W01-m-a	2700	5270	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-m-a	2700	1500	Awning	30	S	None
Kitchen/Living	ALM-002-01 A	W06-b-a	2700	1500	Awning	30	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2985	S	2666	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3003	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3025	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2685	E	5935	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5991	W	2690	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6329	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	70.1	2.00
INT-PB	Internal Plasterboard Stud Wall	64.8	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.9	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-K1CJC7-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0503, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	46.4 Open
Unconditioned*	3.8 NatHERS climate zone
Total	50.3 56 - Mascot AMO
Garage	0.0



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

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.

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

6.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

49.9 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
34.2	15.7
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.



Certificate Check

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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-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.60	0.41	0.39	0.43

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-04 A	W04-a-a	2700	1165	Sliding	45	W	None
Kitchen/Living	ALM-001-04 A	W03-a-a	2700	3960	Sliding	66	N	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*
Kitchen/Living	ALM-001-04 A	W02-a-a	2700	1485	Sliding	45	WNW	None
Kitchen/Living	ALM-001-04 A	W01-a-a	2700	1485	Sliding	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2307	W	3427	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4636	N	2255	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1863	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3977	WNW	181	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.3	2.00
INT-PB	Internal Plasterboard Stud Wall	28.2	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.1	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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).

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.

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-OU12MS-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0504, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	45.6 Open
Unconditioned*	4.2 NatHERS climate zone
Total	49.8 56 - Mascot AMO
Garage	0.0



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

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.

7.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

27.7 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
14.7	13.0
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-OU12MS-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-002-01 A	W03-k-a	2700	2100	Sliding	45	W	None
bedroom	ALM-002-01 A	W01-n-a	2700	2700	Sliding	45	WNW	None
bedroom	ALM-002-01 A	W02-n-a	2700	2700	Sliding	45	N	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	190	N		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3006	W	2488	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1652	N		Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3342	WNW		Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3599	N	3096	Yes
bedroom	Hebel-75-REFL-CAV-RND	2740	3471	S	2840	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	47.7	2.00
INT-PB	Internal Plasterboard Stud Wall	16.3	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	4.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.6	N/A	0.00	Tile
bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bedroom	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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Explanatory Notes

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-19HZ97-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0505, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	53.1 Open
Unconditioned*	4.7 NatHERS climate zone
Total	57.8 56 - Mascot AMO
Garage	0.0



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

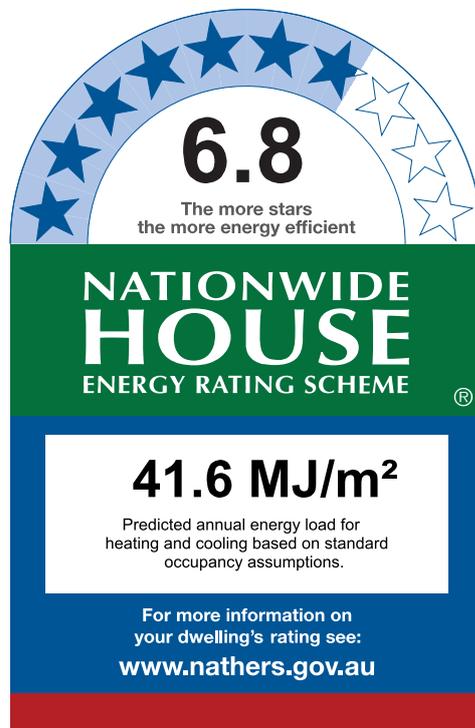
Declaration of interest No Conflict of Interest

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
18.5	23.1
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

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

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W01	2700	2840	Sliding	45	ENE	None
Kitchen/Living	ALM-002-01 A	W02	2700	2880	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3788	NNW		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3032	ENE		Yes

* Refer to glossary.



External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2718	SSE		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	W	2916	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	9661	NNW		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	64.6	2.00

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	4.7	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.5	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

* Refer to glossary.



Roof type

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

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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.
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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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-TCIROQ-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0506, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 80.1	Open
Unconditioned* 5.4	NatHERS climate zone
Total 85.6	56 - Mascot AMO
Garage 0.0	



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

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.

8.0
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

25.9 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
11.2	14.7
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-TCIROQ-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-i-a	2700	1500	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-l-a	2700	2100	Sliding	45	ENE	None
Kitchen/Living	ALM-002-01 A	W01-l-a	2700	2895	Sliding	45	W	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	2799	NNW		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4318	E		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3629	NNW		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3421	ENE		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	1781	SSE		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	212	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	1588	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND	2740	328	W		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	1265	NNW		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	212	S		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	127	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3831	W	4140	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5248	NNW		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	328	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	340	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	46.4	2.00
INT-PB	Internal Plasterboard Stud Wall	56.3	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	5.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.8	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

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Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-S18PDQ-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0507, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 82.7	Open
Unconditioned* 4.0	NatHERS climate zone
Total 86.6	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

32.0 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
13.5	18.5
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-S18PDQ-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-c-a	2700	1145	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01-c-a	2700	1500	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-c-a	2700	3365	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Study	ALM-002-01 A	W04-c-a	2700	1345	Sliding	45	N	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1693	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3069	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	W		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	2117	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	N	2693	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1439	W		Yes
Study	Hebel-75-REFL-CAV-RND	2740	1884	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	76.4	2.00
INT-PB	Internal Plasterboard Stud Wall	67.1	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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).
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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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).

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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.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-HPPAAR-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0508, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 69.1	Open
Unconditioned* 5.5	NatHERS climate zone
Total 74.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

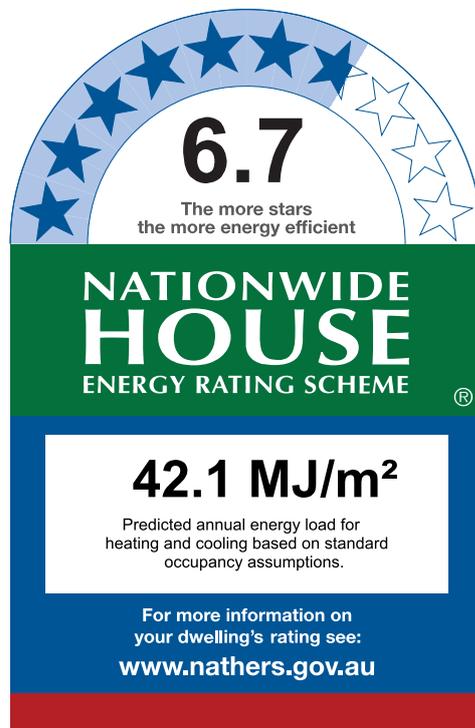
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
26.2	15.9
MJ/m ²	MJ/m ²

About the rating

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* Refer to glossary.

Certificate Check

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

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

Windows

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

Apartment entrance doors

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

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

Provisional* values

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07	2700	2350	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W04	2700	1505	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W05	2700	1505	Sliding	45	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*
Kitchen/Living	ALM-002-01 A	W06	2700	2525	Sliding	45	S	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3218	S	1303	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1249	W	5062	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3556	E		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2583	E	7298	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3958	S	2552	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	W		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	112.8	2.00

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	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-ENGFEN-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0601, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	100.5 Open
Unconditioned*	3.9 NatHERS climate zone
Total	104.4 56 - Mascot AMO
Garage	0.0



Accredited assessor

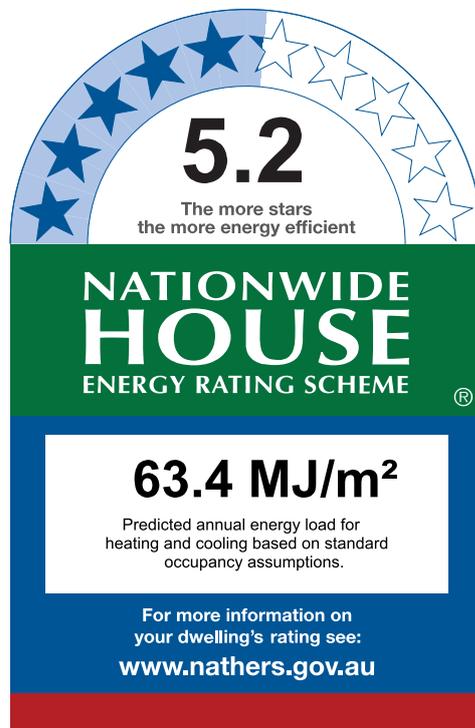
Name Duncan Hope
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Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
43.3	20.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-ENGFEN-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W05-d-a-a	2700	2793	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W03-j-a-a	2700	1460	Sliding	45	S	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	ALM-004-01 A	W04-f-a-a	2700	2815	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-m-a-a	2700	5270	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-m-a-a	2700	1500	Awning	30	S	None
Kitchen/Living	ALM-002-01 A	W06-b-a-a	2700	1500	Awning	30	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3125	S	2280	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3003	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2983	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2299	E	5977	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5991	W	2690	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6329	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.2	2.00
INT-PB	Internal Plasterboard Stud Wall	65.9	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.9	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.9	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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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).

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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.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JNPK0A-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0602, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	46.4 Open
Unconditioned*	3.8 NatHERS climate zone
Total	50.3 56 - Mascot AMO
Garage	0.0



Accredited assessor

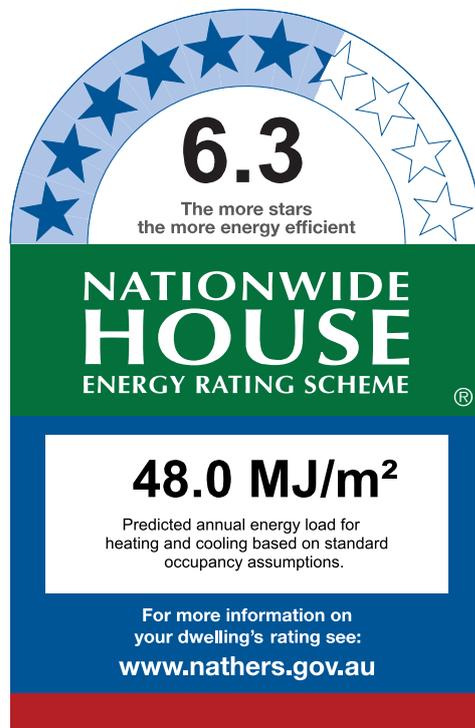
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
33.6	14.4
MJ/m ²	MJ/m ²

About the rating

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Verification

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* Refer to glossary.

Certificate Check

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Ceiling penetrations*

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

Windows

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

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-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.60	0.41	0.39	0.43

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-04 A	W04-a-a-a	2700	1165	Sliding	45	W	None
Kitchen/Living	ALM-001-04 A	W03-a-a-a	2700	3960	Sliding	66	N	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*
Kitchen/Living	ALM-001-04 A	W02-a-a-a	2700	1485	Sliding	45	WNW	None
Kitchen/Living	ALM-001-04 A	W01-a-a-a	2700	1485	Sliding	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2307	W	3427	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4636	N	2255	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1863	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3977	WNW	181	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.3	2.00
INT-PB	Internal Plasterboard Stud Wall	28.2	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.1	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
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.
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Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JFXOD6-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0603, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 86.1	Open
Unconditioned* 3.1	NatHERS climate zone
Total 89.2	56 - Mascot AMO
Garage 0.0	



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

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.

7.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

28.5 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
9.0	19.5
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-JFXOD6-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W08	2700	1500	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W05	2700	2700	Sliding	45	WNW	None
Bedroom 02	ALM-002-01 A	W06	2700	2700	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W07	2700	2700	Sliding	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	3782	NNW		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	4424	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3342	WNW		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3599	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3471	S		Yes
Ensuite	Hebel-75-REFL-CAV-RND-B	2740	1609	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND-B	2740	328	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	804	N	2742	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3901	WNW	4069	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	8027	NNW		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	328	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	340	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	52.1	2.00
INT-PB	Internal Plasterboard Stud Wall	38.9	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	4.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	50.6	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.00	Carpet



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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

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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

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).

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Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-3ICRJB-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0604, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.3	Open
Unconditioned* 4.4	NatHERS climate zone
Total 49.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

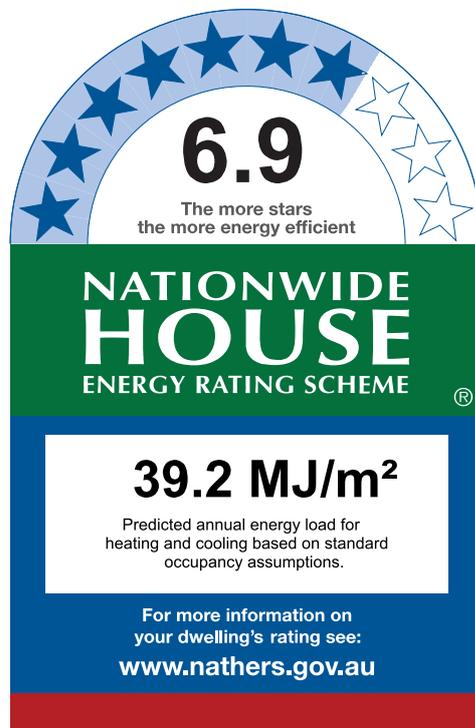
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
15.9	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-3ICRJB-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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	2415	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1840	Sliding	45	ENE	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (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	HEBEL-100-REFL-CAV1-A	2740	3302	N	2506	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1990	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2140	ENE	3518	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	127	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	4062	NNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	31	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	30.3	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	15.0	2.00
INT-PB	Internal Plasterboard Stud Wall	13.2	2.00
INT-PB	Internal Plasterboard Stud Wall	27.1	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	4.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-K114SL-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0605, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	82.7	Open
Unconditioned*	4.0	NatHERS climate zone
Total	86.6	56 - Mascot AMO
Garage	0.0	



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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

32.8 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
13.8	19.1
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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-K114SL-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-c-a-a	2700	1145	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01-c-a-a	2700	1500	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02-c-a-a	2700	3365	Sliding	45	N	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*
Study	ALM-002-01 A	W04-c-a-a	2700	1345	Sliding	45	N	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1693	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3069	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	W		Yes
Hallway	Hebel-75-REFL-CAV-RND	2740	2117	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4001	N	2693	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1439	W		Yes
Study	Hebel-75-REFL-CAV-RND	2740	1884	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	76.4	2.00
INT-PB	Internal Plasterboard Stud Wall	67.1	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	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

Glossary

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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).
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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.
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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.
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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).

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.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I4E49G-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0606, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 87.0	Open
Unconditioned* 5.1	NatHERS climate zone
Total 92.1	56 - Mascot AMO
Garage 0.0	



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

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.

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

7.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

31.9 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
20.6	11.3
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-I4E49G-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W07-a-a-a	600	900	Awning	90	E	None
Bedroom 01	ALM-004-01 A	W06-a-a-a	2700	2891	Sliding	45	S	None

* Refer to glossary.



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-004-01 A	W01-h-a-a	2700	3000	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W02-h-a-a	2700	1800	Sliding	45	E	None
Bedroom 03	ALM-004-01 A	W03-g-a-a	2700	1500	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W04-e-a-a	2700	3000	Sliding	66	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2721	E		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3303	S	2125	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2239	W	3710	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3112	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	2201	E	10101	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2064	S	2043	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4391	S	2120	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	317	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	79.3	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	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	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.9	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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).

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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

Disclaimer

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-QQIXDO-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0701, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	100.5 Open
Unconditioned*	3.9 NatHERS climate zone
Total	104.4 56 - Mascot AMO
Garage	0.0



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

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.

6.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

47.3 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
30.8	16.6
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-QQIXDO-02>. 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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W05-d-a-a-a	2700	2793	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W03-j-a-a-a	2700	1460	Sliding	45	S	None
Bedroom 03	ALM-004-01 A	W04-f-a-a-a	2700	2815	Sliding	45	S	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*
Kitchen/Living	ALM-004-01 A	W01-m-a-a-a	2700	5270	Sliding	45	W	None
Kitchen/Living	ALM-004-01 A	W02-m-a-a-a	2700	1500	Awning	30	S	None
Kitchen/Living	ALM-004-01 A	W06-b-a-a-a	2700	1500	Awning	30	S	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3125	S	2280	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3003	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2983	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2299	E	5977	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5991	W	2690	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6329	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.2	2.00
INT-PB	Internal Plasterboard Stud Wall	65.9	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.9	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.9	N/A	0.00	Tile

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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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.
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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-IDGTZG-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0702, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 46.4	Open
Unconditioned* 3.8	NatHERS climate zone
Total 50.3	56 - Mascot AMO
Garage 0.0	



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

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.

6.0
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

50.4 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
36.4	14.0
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-IDGTZG-02>. 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-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-04 A	Aluminium B SG Low Solar Gain Low-E	5.60	0.41	0.39	0.43

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-04 A	W04-a-a-a-a	2700	1165	Sliding	45	W	None
Kitchen/Living	ALM-001-04 A	W03-a-a-a-a	2700	3960	Sliding	66	N	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*
Kitchen/Living	ALM-001-04 A	W02-a-a-a-a	2700	1485	Sliding	45	WNW	None
Kitchen/Living	ALM-001-04 A	W01-a-a-a-a	2700	1485	Sliding	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)	Orient-ation	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)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2307	W	3427	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4636	N	2255	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1863	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3977	WNW	181	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.3	2.00
INT-PB	Internal Plasterboard Stud Wall	28.2	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.1	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-EE0UAN-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0703, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 86.1	Open
Unconditioned* 3.1	NatHERS climate zone
Total 89.2	56 - Mascot AMO
Garage 0.0	



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

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
9.4	17.9
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-EE0UAN-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W08-b	2700	1500	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W05-e	2700	2700	Sliding	45	WNW	None
Bedroom 02	ALM-002-01 A	W06-c	2700	2700	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W07-b	2700	2700	Sliding	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	3782	NNW		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	4424	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3342	WNW		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3599	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3471	S		Yes
Ensuite	Hebel-75-REFL-CAV-RND-B	2740	1609	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND-B	2740	328	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	804	N	2742	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3901	WNW	4069	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	8027	NNW		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	328	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	340	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	52.1	2.00
INT-PB	Internal Plasterboard Stud Wall	38.9	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	4.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	50.7	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.00	Carpet



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-W6WQA7-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0704, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type	
Conditioned*	45.3	Open
Unconditioned*	4.4	NatHERS climate zone
Total	49.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

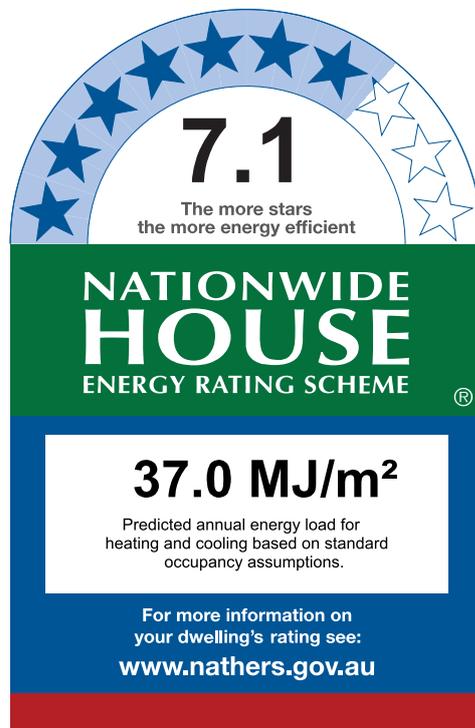
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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



Thermal Performance

Heating	Cooling
14.8	22.2
MJ/m ²	MJ/m ²

About the rating

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* Refer to glossary.

Certificate Check

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

Ceiling penetrations*

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	2415	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1840	Sliding	45	ENE	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (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	HEBEL-100-REFL-CAV1-A	2740	3302	N	2506	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1990	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2140	ENE	3518	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	127	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	4062	NNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	31	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	21.3	2.00
INT-PB	Internal Plasterboard Stud Wall	37.1	2.00
INT-PB	Internal Plasterboard Stud Wall	27.1	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	4.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.8	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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.
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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.
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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.
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National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-J9BC49-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0705, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	121.8 Open
Unconditioned*	6.5 NatHERS climate zone
Total	128.2 56 - Mascot AMO
Garage	0.0



Accredited assessor

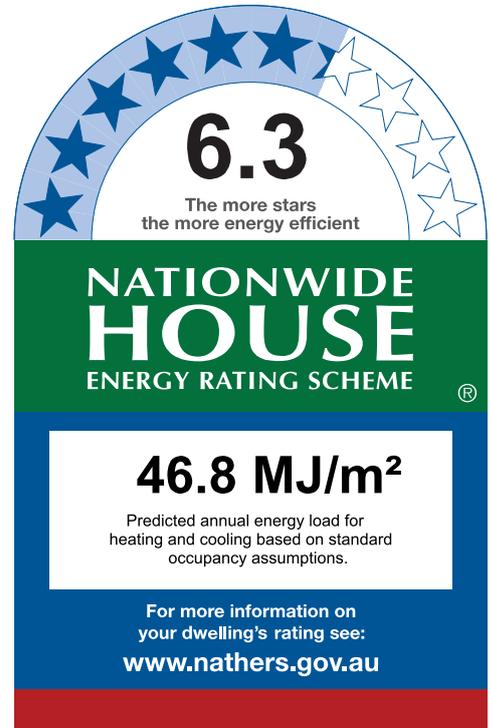
Name Duncan Hope
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Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
35.3	11.5
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-J9BC49-02>. 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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bathroom	ALM-002-01 A	W02	2700	1500	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W03	2700	900	Sliding	45	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*
Bedroom 02	ALM-002-01 A	W01	2700	1395	Sliding	45	N	None
Bedroom 03	ALM-004-01 A	W08	2700	3000	Sliding	45	ESE	None
Kitchen/Living	ALM-004-01 A	W06	2700	2700	Sliding	45	ESE	None
Kitchen/Living	ALM-004-01 A	W05	2700	2860	Sliding	45	N	None
Kitchen/Living	ALM-004-01 A	W07	2700	740	Sliding	45	ESE	None
Living	ALM-004-01 A	W04	2700	3000	Sliding	45	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	1947	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2752	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4204	NNW	260	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1354	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	N		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3523	ESE	498	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3323	S		Yes
Entry	Hebel-75-REFL-CAV-RND	2740	2117	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	134	ENE	-719	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3096	ESE	433	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3535	N	4180	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1268	ESE	433	Yes
Living	Hebel-75-REFL-CAV-RND	2740	3196	N	300	Yes
Living	Hebel-75-REFL-CAV-RND	2740	3790	E	3338	Yes
Pantry	Hebel-75-REFL-CAV-RND	2740	677	W		Yes
WIR	Hebel-75-REFL-CAV-RND	2740	572	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	26.8	2.00
INT-PB	Internal Plasterboard Stud Wall	113.5	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	6.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.8	N/A	0.00	Tile
Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.6	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Living	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Study	1	Downlight	200	Sealed
WIR	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* Refer to glossary.

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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-CB4R06-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0706, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 102.9	Open
Unconditioned* 5.1	NatHERS climate zone
Total 108.0	56 - Mascot AMO
Garage 0.0	



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

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.

6.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

48.2 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
35.7	12.5
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-CB4R06-02>. 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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W04	2700	1948	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W01-h-a-a-a	2700	3000	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W02-h-a-a-a	2700	1800	Sliding	45	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*
Bedroom 03	ALM-004-01 A	W03-g-a-a-a	2700	1900	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W05	2700	2860	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W06	2700	4445	Sliding	66	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	2357	S	2115	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	649	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-A	2740	2239	W	3710	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-A	2740	3112	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-A	2740	2201	E	10101	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND-A	2740	2066	S	2113	Yes
Hallway	Hebel-75-REFL-CAV-RND-B	2740	318	N		Yes
Hallway	Hebel-75-REFL-CAV-RND-B	2740	315	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	3645	S	2115	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	5504	E	3310	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	1291	S	327	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	2964	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	1033	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	67.6	2.00
INT-PB	Internal Plasterboard Stud Wall	80.6	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	9.3	N/A	0.00	Tile

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	46.0	N/A	0.00	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

* 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) licenced 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

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).

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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-4DG1VZ-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0801, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 100.5	Open
Unconditioned* 3.9	NatHERS climate zone
Total 104.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

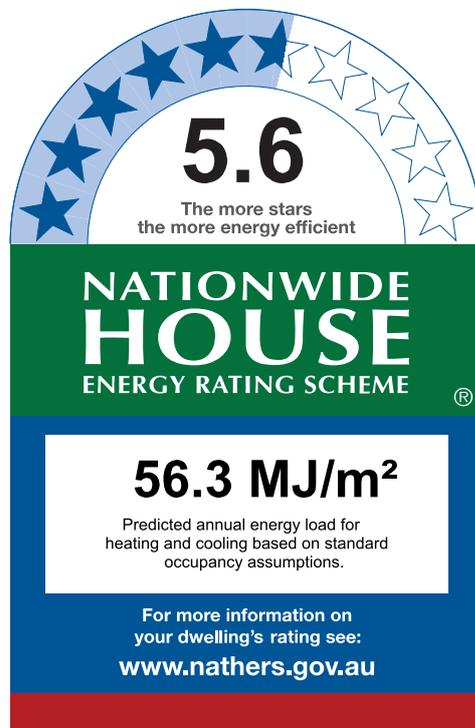
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
39.4	16.9
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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W05-d-a-a-a-a	2700	2793	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W03-j-a-a-a-a	2100	1460	Sliding	45	S	None
Bedroom 03	ALM-004-01 A	W04-f-a-a-a-a	2100	2815	Sliding	45	S	None

* Refer to glossary.



Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-004-01 A	W01-m-a-a-a-a	2700	5270	Sliding	45	W	None
Kitchen/Living	ALM-004-01 A	W02-m-a-a-a-a	2700	1500	Awning	30	S	None
Kitchen/Living	ALM-004-01 A	W06-b-a-a-a-a	2700	1500	Awning	30	S	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
None				

* Refer to glossary.

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	3125	S	2280	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3003	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2983	S		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	2299	E	5977	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	5991	W	2690	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	6329	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	71.2	2.00
INT-PB	Internal Plasterboard Stud Wall	65.9	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	18.9	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.9	N/A	0.00	Tile

* Refer to glossary.

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-NNPVN1-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0802, 4 Delmar Parade, DEE WHY, NSW, 2099

Lot/DP

NCC Class* 2

Type New

Plans

Main Plan Project No. 221054

Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned*	46.4 Open
Unconditioned*	3.8 NatHERS climate zone
Total	50.3 56 - Mascot AMO
Garage	0.0



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

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.

6.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

43.7 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
27.4	16.3
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-NNPVN1-02>. 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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W04-a-a-a-a-a	2700	1165	Sliding	45	W	None
Kitchen/Living	ALM-004-01 A	W03-a-a-a-a-a	2700	3960	Sliding	66	N	None
Kitchen/Living	ALM-004-01 A	W02-a-a-a-a-a	2700	1485	Sliding	45	WNW	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-004-01 A	W01-a-a-a-a-a	2700	1485	Sliding	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2307	W	3427	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4636	N	2255	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	1863	S		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3977	WNW	181	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	56.3	2.00
INT-PB	Internal Plasterboard Stud Wall	28.2	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.1	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-RLSL30-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0803, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 86.1	Open
Unconditioned* 3.1	NatHERS climate zone
Total 89.2	56 - Mascot AMO
Garage 0.0	



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

National Construction Code (NCC) requirements

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the more energy efficient

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ENERGY RATING SCHEME

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

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13.2	16.5
MJ/m ²	MJ/m ²

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Verification

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W08-b-a	2700	1500	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W05-e-a	2700	2700	Sliding	45	WNW	None
Bedroom 02	ALM-002-01 A	W06-c-a	2700	2700	Sliding	45	N	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W07-b-a	2700	2700	Sliding	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
None				

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	3782	NNW		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	4424	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3342	WNW		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3599	N		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-B	2740	3471	S		Yes
Ensuite	Hebel-75-REFL-CAV-RND-B	2740	1609	E		Yes
Ensuite	Hebel-75-REFL-CAV-RND-B	2740	328	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	804	N	2742	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	3901	WNW	4069	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	8027	NNW		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	328	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-A	2740	340	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	52.1	2.00
INT-PB	Internal Plasterboard Stud Wall	38.9	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	4.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	50.7	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.00	Carpet

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

* Refer to glossary.

Explanatory Notes

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Glossary

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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-TCQCVX-01

Generated on 10 Dec 2021 using HERO v1.2-beta

Property

Address F0804, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 45.3	Open
Unconditioned* 4.4	NatHERS climate zone
Total 49.7	56 - Mascot AMO
Garage 0.0	



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

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.

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

6.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

49.3 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
27.3	22.0
MJ/m ²	MJ/m ²

About the rating

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Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-TCQCVX-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.

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

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

Windows

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	2415	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1840	Sliding	45	ENE	None

* Refer to glossary.

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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (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	HEBEL-100-REFL-CAV1-A	2740	3302	N	2506	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1990	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2140	ENE	3518	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	127	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	4062	NNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	31	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	21.3	2.00
INT-PB	Internal Plasterboard Stud Wall	37.1	2.00
INT-PB	Internal Plasterboard Stud Wall	27.1	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	4.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.8	N/A	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	2.50	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

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

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Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-A2Y7GA-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0805, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a/342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 121.8	Open
Unconditioned* 6.5	NatHERS climate zone
Total 128.3	56 - Mascot AMO
Garage 0.0	



Accredited assessor

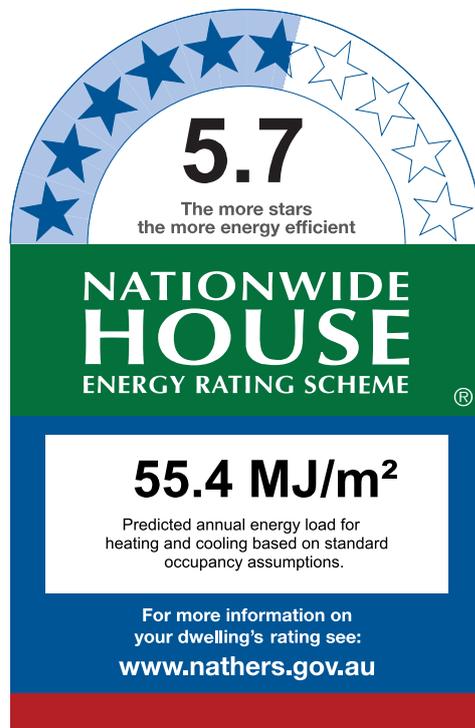
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
43.1	12.3
MJ/m ²	MJ/m ²

About the rating

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Verification

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

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

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

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

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-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bathroom	ALM-002-01 A	W02-r	2700	1500	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W03-o	2700	900	Sliding	45	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*
Bedroom 02	ALM-002-01 A	W01-r	2700	1395	Sliding	45	N	None
Bedroom 03	ALM-002-01 A	W08-c	2700	3000	Sliding	45	ESE	None
Kitchen/Living	ALM-002-01 A	W05-f	2700	2860	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W07-c	2700	740	Sliding	45	ESE	None
Kitchen/Living	ALM-002-01 A	W06-d	2700	2700	Sliding	45	ESE	None
Living	ALM-004-01 A	W04-i	2700	3000	Sliding	45	E	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	Hebel-75-REFL-CAV-RND	2740	1947	N		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	2752	W		Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	4204	NNW	260	Yes
Bedroom 01	Hebel-75-REFL-CAV-RND	2740	1354	E		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3599	W		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND	2740	3006	N		Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3523	ESE	498	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND	2740	3323	S		Yes
Entry	Hebel-75-REFL-CAV-RND	2740	2117	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	134	ENE	-719	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	3535	N	4180	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND	2740	4364	ESE	432	Yes
Living	Hebel-75-REFL-CAV-RND	2740	3196	N	300	Yes
Living	Hebel-75-REFL-CAV-RND	2740	3790	E	3338	Yes
Pantry	Hebel-75-REFL-CAV-RND	2740	677	W		Yes
WIR	Hebel-75-REFL-CAV-RND	2740	572	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	26.8	2.00
INT-PB	Internal Plasterboard Stud Wall	113.5	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	6.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.9	N/A	0.00	Tile
Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
WIR	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Living	2	Downlight	200	Sealed
Study	1	Downlight	200	Sealed
WIR	1	Downlight	200	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

Explanatory Notes

About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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-CL3R00-02

Generated on 23 Nov 2022 using Hero 3.0.1

Property

Address F0806, 4 Delmar Parade, DEE WHY, NSW, 2099
Lot/DP 13a//342819
NCC Class* 2
Type New

Plans

Main Plan Project No. 221054
Prepared by Rothe Lowman

Construction and environment

Assessed floor area (m ²)*	Exposure Type
Conditioned* 102.9	Open
Unconditioned* 5.1	NatHERS climate zone
Total 108.0	56 - Mascot AMO
Garage 0.0	



Accredited assessor

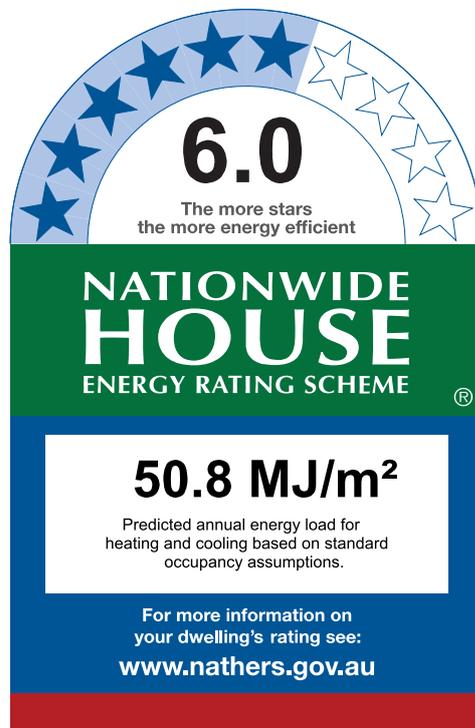
Name Duncan Hope
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Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
40.0	10.9
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-CL3R00-02>. 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-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.80	0.59	0.56	0.62

Custom* windows

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

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-004-01 A	W04-j	2700	1948	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W01-h-a-a-a-a	2700	3000	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W02-h-a-a-a-a	2700	1800	Sliding	45	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*
Bedroom 03	ALM-004-01 A	W03-g-a-a-a-a	2700	1900	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W06-e	2700	4445	Sliding	66	E	None
Kitchen/Living	ALM-004-01 A	W05-g	2700	2860	Sliding	45	S	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
None				

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Hebel-75-REFL-CAV-RND-A	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes
Hebel-75-REFL-CAV-RND-B	Rendered Hebel (75mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	Hebel-75-REFL-CAV-RND-B	2740	3006	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-A	2740	2239	W	3710	Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-A	2740	3112	S		Yes
Bedroom 02	Hebel-75-REFL-CAV-RND-A	2740	2201	E	10101	Yes
Bedroom 03	Hebel-75-REFL-CAV-RND-A	2740	2066	S	2113	Yes
Hallway	Hebel-75-REFL-CAV-RND-B	2740	318	N		Yes
Hallway	Hebel-75-REFL-CAV-RND-B	2740	315	W		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	5504	E	3310	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	1291	S	327	Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	2964	E		Yes
Kitchen/Living	Hebel-75-REFL-CAV-RND-B	2740	4678	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
Hebel Partition Wall	Hebel Partition Wall	67.6	2.00
INT-PB	Internal Plasterboard Stud Wall	80.6	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	9.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	46.2	N/A	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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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).