

Nationwide House Energy Rating Scheme — Class 2 Summary

NatHERS Certificate No. #HR-6DIV8O-01

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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-01	A0201	11.8	20.3	32.1	7.4
HR-7RHIVQ-01	A0202	15.1	24.2	39.3	6.9
HR-4HAWNB-01	A0203	11.6	22.3	33.8	7.4
HR-NSDK18-01	A0204	20.6	17.0	37.6	7.1

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-01	A0205	5.3	22.4	27.6	7.9
HR-MMX6YV-01	A0206	11.9	23.3	35.2	7.3
HR-FV6D97-01	A0301	12.1	19.7	31.8	7.5
HR-V2DUIL-01	A0302	11.2	15.4	26.6	7.9
HR-ZD6XES-01	A0303	11.0	17.4	28.3	7.8
HR-EJNPSS-01	A0304	4.4	26.4	30.8	7.6
HR-QHJ80M-01	A0305	8.4	25.2	33.6	7.4
HR-VSSC10-01	A0306	21.2	16.7	37.9	7.1
HR-FX2CZA-01	A0307	6.6	21.7	28.3	7.8
HR-PAEB6M-01	A0308	12.3	22.8	35.0	7.3
HR-6ADEAW-01	A0401	14.3	14.4	28.7	7.8
HR-JIUUV8J-01	A0402	13.8	11.5	25.2	8.1
HR-GW2UDC-01	A0403	13.0	13.8	26.8	7.9
HR-QJMAG4-01	A0404	6.4	21.3	27.7	7.9
HR-R9YXH1-01	A0405	10.3	24.9	35.3	7.3
HR-ICAKPE-01	A0406	24.7	12.0	36.7	7.2
HR-DTWRSG-01	A0407	9.3	16.6	25.9	8.0
HR-OPRWPW-01	A0408	15.3	19.1	34.4	7.3
HR-71PPQJ-01	A0501	28.7	22.8	51.5	5.9
HR-YQDCV8-01	A0502	38.0	16.2	54.2	5.8
HR-J3VKRO-01	A0504	28.4	27.3	55.7	5.7
HR-DIYBLR-01	A0505	38.0	19.6	57.6	5.5
HR-WB18MP-01	A0506	34.8	20.0	54.7	5.7
HR-UEGHBQ-01	A0507	24.5	29.0	53.5	5.8
HR-XZCTFX-01	B0101	35.9	17.5	53.4	5.8
HR-JZRXHR-01	B0102	45.0	11.9	56.9	5.6
HR-BPLRIL-01	B0103	28.9	15.9	44.8	6.5
HR-79B8KS-01	B0104	22.9	14.6	37.4	7.1
HR-VX79VW-01	B0105	30.1	16.7	46.8	6.3



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-G1NXAH-01	B0106	44.2	11.3	55.5	5.7
HR-BTCTAJ-01	B0201	24.5	29.2	53.7	5.8
HR-JRIH84-01	B0202	15.3	16.3	31.7	7.5
HR-0C2UDN-01	B0203	10.2	12.9	23.1	8.2
HR-VLWLHC-01	B0204	18.2	16.9	35.1	7.3
HR-GS2WWA-01	B0205	2.7	27.5	30.2	7.7
HR-ACICVA-01	B0206	12.6	19.3	31.9	7.5
HR-Y3UWJS-01	B0301	25.3	28.2	53.5	5.8
HR-YU11AL-01	B0302	15.9	16.1	32.0	7.4
HR-YJHI37-01	B0303	10.7	12.7	23.3	8.2
HR-ZWSNJD-01	B0304	18.7	16.6	35.3	7.3
HR-9ZNQNH-01	B0305	3.0	26.7	29.6	7.7
HR-TGGTRK-01	B0306	13.3	18.5	31.8	7.5
HR-WQBFSH-01	B0401	29.7	23.9	53.6	5.8
HR-WZ2KG4-01	B0402	18.9	13.9	32.8	7.4
HR-5ST2MQ-01	B0403	13.1	10.2	23.3	8.2
HR-AMAI4O-01	B0404	22.2	12.8	35.0	7.3
HR-1S0397-01	B0405	5.0	23.8	28.7	7.8
HR-Z69FBN-01	B0406	17.7	13.8	31.6	7.5
HR-N9UXQX-01	B0501	42.8	28.0	70.8	4.7
HR-6UJOR5-01	B0502	32.8	20.8	53.6	5.8
HR-BCTAX6-01	B0503	31.6	19.3	50.9	6.0
HR-PDB7Z0-01	B0504	31.8	18.0	49.8	6.1
HR-2LASXT-01	B0505	18.6	24.8	43.4	6.6
HR-79E6DM-01	B0506	31.4	16.9	48.3	6.2
HR-I1WFBR-01	C0101	41.7	9.1	50.8	6.0
HR-GN8YL2-01	C0102	21.6	11.5	33.2	7.4
HR-A694YX-01	C0103	23.8	18.7	42.5	6.7
HR-G4GMOQ-01	C0104	42.3	13.8	56.1	5.6



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-XN8AB1-01	C0201	35.5	28.6	64.2	5.1
HR-KEUKUL-01	C0202	4.0	26.0	30.0	7.7
HR-BXSEIA-01	C0203	10.2	24.7	34.8	7.3
HR-E5DP13-01	C0204	16.1	21.6	37.7	7.1
HR-ELFIRG-01	C0205	24.9	16.4	41.3	6.8
HR-9FAPSS-01	C0301	27.9	23.8	51.7	5.9
HR-5YNXDO-01	C0302	4.4	25.7	30.1	7.7
HR-G8E6ZZ-01	C0303	10.8	24.3	35.1	7.3
HR-JPZXTR-01	C0304	16.9	21.2	38.1	7.1
HR-FZU6XY-01	C0305	20.0	24.1	44.0	6.6
HR-PHWNLW-01	C0401	32.8	19.5	52.3	5.9
HR-ZRPDYX-01	C0402	6.7	22.2	28.8	7.8
HR-55WU18-01	C0403	13.9	19.3	33.3	7.4
HR-Z5I18Z-01	C0404	21.5	15.7	37.2	7.1
HR-KFNMWU-01	C0405	23.2	15.8	39.1	6.9
HR-FADSRX-01	C0501	43.6	24.7	68.3	4.9
HR-KDXKR6-01	C0502	21.7	25.4	47.0	6.3
HR-EKQ3PL-01	C0503	29.0	29.2	58.2	5.4
HR-G62ZS7-01	C0504	34.6	17.4	52.0	5.9
HR-997BLZ-01	C0505	37.9	22.3	60.2	5.4
HR-NHY4UQ-01	D0101	31.1	11.9	43.0	6.7
HR-WWP2XK-01	D0102	29.5	19.3	48.8	6.2
HR-I5HFVI-01	D0103	23.5	14.0	37.5	7.1
HR-4FFLR6-01	D0104	7.7	21.3	28.9	7.8
HR-ZD7BB1-01	D0201	10.8	19.8	30.5	7.6
HR-IKTTRQ-01	D0202	16.0	24.9	41.0	6.8
HR-Q2E5Z1-01	D0203	16.8	16.9	33.6	7.4
HR-PU49WI-01	D0204	35.1	24.2	59.2	5.4
HR-814D3D-01	D0205	33.9	25.2	59.1	5.4



Summary of all dwellings

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HR-3FGRYG-01	D0206	37.7	16.4	54.0	5.8
HR-2IURMM-01	D0207	20.2	20.2	40.3	6.9
HR-WMC4UR-01	D0208	2.7	26.8	29.6	7.7
HR-QQN25S-01	D0301	11.2	19.6	30.8	7.6
HR-HISO1L-01	D0302	16.7	23.5	40.3	6.9
HR-N70MH7-01	D0303	17.3	16.4	33.7	7.4
HR-PB47VV-01	D0304	21.2	18.0	39.2	6.9
HR-87HD5G-01	D0305	20.6	20.5	41.0	6.8
HR-SR84JU-01	D0306	37.3	16.2	53.5	5.8
HR-98Y5V8-01	D0307	20.3	20.0	40.3	6.9
HR-NLKPPH-01	D0308	2.8	25.9	28.7	7.8
HR-NZHOOC-01	D0401	13.9	16.5	30.5	7.6
HR-BYWIHK-01	D0402	20.7	17.1	37.8	7.1
HR-W9BS1Y-01	D0403	20.7	12.7	33.3	7.4
HR-HY90I5-01	D0404	25.7	15.0	40.7	6.9
HR-5OMDDY-01	D0405	24.9	14.3	39.2	6.9
HR-66RHDE-01	D0406	42.4	13.2	55.6	5.7
HR-18XPEZ-01	D0407	24.7	17.3	41.9	6.8
HR-48YZKJ-01	D0408	3.7	18.6	22.3	8.3
HR-JBVEMG-01	D0501	18.8	15.2	34.0	7.4
HR-6FHNS8-01	D0502	14.0	24.4	38.4	7.0
HR-HE3YXX-01	D0503	29.1	14.4	43.5	6.6
HR-5NXI2L-01	D0504	28.7	14.6	43.3	6.6
HR-LE8KXK-01	D0505	22.0	13.4	35.4	7.3
HR-HFX6AU-01	D0506	44.7	12.7	57.4	5.5
HR-6QE2U8-01	D0507	24.3	17.6	41.8	6.8
HR-RWFVOE-01	D0508	1.3	18.0	19.3	8.6
HR-2VR5V4-01	D0601	26.9	25.3	52.3	5.9
HR-XHBWOT-01	D0602	42.2	20.3	62.5	5.2



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HR-3FAQWY-01	D0603	37.1	18.6	55.6	5.7
HR-5LOMTC-01	D0604	44.2	16.7	61.0	5.3
HR-5YGKYX-01	D0605	26.1	11.6	37.7	7.1
HR-3QHNFK-01	E0101	20.6	24.5	45.1	6.4
HR-GKG5UQ-01	E0102	39.4	13.6	53.0	5.9
HR-JJSBIP-01	E0103	37.0	15.5	52.5	5.9
HR-I327ZQ-01	E0104	39.8	10.0	49.7	6.1
HR-C7MQ2A-01	E0105	28.4	17.6	46.0	6.4
HR-I3INAV-01	E0106	37.6	22.6	60.2	5.4
HR-03EVYM-01	E0107	32.1	13.2	45.3	6.4
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-01	E0301	5.8	18.8	24.6	8.1
HR-6NXU71-01	E0302	8.1	17.0	25.1	8.1
HR-GBWI9N-01	E0303	28.8	18.1	47.0	6.3
HR-9BBQVD-01	E0304	25.6	12.9	38.5	7.0
HR-KGUY7-01	E0305	35.5	26.1	61.6	5.3
HR-I5757C-01	E0306	41.9	19.2	61.1	5.3
HR-5DFB0W-01	E0307	19.2	19.8	39.0	7.0



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HR-Z6SLH9-01	E0308	18.6	17.8	36.4	7.2
HR-N3WP8H-01	E0309	11.0	18.4	29.4	7.7
HR-5J6R7Z-01	E0310	12.2	21.6	33.8	7.4
HR-739JT6-01	E0311	31.5	29.0	60.4	5.3
HR-TYZCTL-01	E0401	8.3	16.0	24.3	8.1
HR-1KC90Y-01	E0402	7.9	28.0	36.0	7.2
HR-5KBEAK-01	E0403	33.8	15.4	49.2	6.1
HR-VS1IJC-01	E0404	30.0	10.8	40.8	6.9
HR-Z5A04B-01	E0405	42.3	21.3	63.6	5.2
HR-NC9P95-01	E0406	41.6	16.4	57.9	5.5
HR-A6ZCGZ-01	E0407	23.4	17.9	41.3	6.8
HR-LNDT7F-01	E0408	22.8	15.0	37.8	7.1
HR-DZKGZV-01	E0409	13.6	17.8	31.4	7.6
HR-C7SPLU-01	E0410	13.0	16.8	29.8	7.7
HR-KES7H3-01	E0411	32.8	25.8	58.7	5.4
HR-LIAPAI-01	E0501	8.8	15.5	24.3	8.1
HR-THXYIY-01	E0502	8.1	27.8	35.9	7.2
HR-U5213P-01	E0503	27.4	19.2	46.6	6.4
HR-PT5VZY-01	E0504	25.8	11.8	37.7	7.1
HR-9LGBDD-01	E0505	39.4	26.5	65.9	5.0
HR-D6KTNQ-01	E0506	39.4	18.4	57.8	5.5
HR-D4QRU2-01	E0507	24.1	17.4	41.5	6.8
HR-TLNSPC-01	E0508	23.4	15.0	38.4	7.0
HR-KKURX1-01	E0509	14.0	17.4	31.4	7.6
HR-GTE0SP-01	E0510	13.4	16.3	29.8	7.7
HR-F5HTUK-01	E0511	33.8	25.8	59.6	5.4
HR-2R2THB-01	E0601	24.7	19.3	44.0	6.6
HR-CCGSUP-01	E0602	36.0	19.1	55.2	5.7
HR-94JKLL-01	E0603	45.3	11.9	57.2	5.6



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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-T9FDLX-01	E0604	36.9	22.7	59.6	5.4
HR-FZZ2CE-01	E0605	34.4	13.7	48.1	6.2
HR-L4I1K3-01	E0606	17.2	15.4	32.6	7.4
HR-IBVW9N-01	E0607	17.6	15.6	33.2	7.4
HR-AQ8G2B-01	E0608	42.6	26.5	69.1	4.8
HR-QH2DPW-01	E0609	18.2	18.5	36.6	7.2
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-1ETL37-01	F0203	26.3	15.0	41.3	6.8
HR-D93410-01	F0204	26.9	27.0	53.9	5.8
HR-QROVCG-01	F0301	20.8	27.0	47.8	6.3
HR-6YPWRB-01	F0302	33.3	25.9	59.2	5.4
HR-VI147K-01	F0303	33.7	29.1	62.8	5.2
HR-1QPVXH-01	F0304	14.6	23.0	37.6	7.1
HR-M55GDX-01	F0305	21.8	26.9	48.7	6.2
HR-LPXJHT-01	F0306	9.6	26.3	35.8	7.2
HR-0MKF9W-01	F0307	13.8	15.4	29.2	7.7
HR-J3JPTB-01	F0308	21.1	19.3	40.4	6.9
HR-PZJ46R-01	F0401	26.8	20.4	47.2	6.3
HR-H30PK7-01	F0402	39.8	22.8	62.6	5.2
HR-FGCG8K-01	F0403	40.6	19.8	60.4	5.3
HR-Q2KM1H-01	F0404	18.9	14.9	33.7	7.4
HR-5Y0UT4-01	F0405	18.0	23.1	41.1	6.8
HR-EYHR4E-01	F0406	13.1	22.3	35.5	7.3
HR-UXRM44-01	F0407	15.4	14.7	30.1	7.7
HR-R4JJZO-01	F0408	25.6	16.6	42.2	6.7
HR-8CQUKL-01	F0501	27.6	20.0	47.7	6.3
HR-16J4QD-01	F0502	40.7	22.4	63.0	5.2
HR-K1CJC7-01	F0503	41.5	19.4	60.9	5.3



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HR-OU12MS-01	F0504	19.5	14.5	33.9	7.4
HR-19HZ97-01	F0505	18.5	23.1	41.6	6.8
HR-TCIROQ-01	F0506	13.6	21.8	35.4	7.3
HR-S18PDQ-01	F0507	16.0	14.2	30.2	7.6
HR-HPPAAR-01	F0508	26.2	15.9	42.1	6.7
HR-ENGFEN-01	F0601	43.2	20.8	64.0	5.1
HR-JNPK0A-01	F0602	39.5	15.7	55.2	5.7
HR-JFXOD6-01	F0603	23.3	9.6	32.8	7.4
HR-3ICRJB-01	F0604	15.9	23.4	39.2	6.9
HR-K114SL-01	F0605	16.1	14.5	30.5	7.6
HR-I4E49G-01	F0606	38.3	19.5	57.8	5.5
HR-QQIXDO-01	F0701	44.0	20.7	64.7	5.1
HR-IDGTZG-01	F0702	40.2	15.1	55.3	5.7
HR-EE0UAN-01	F0703	12.8	13.3	26.0	7.9
HR-W6WQA7-01	F0704	14.8	22.2	37.0	7.1
HR-J9BC49-01	F0705	29.9	11.2	41.1	6.8
HR-CB4R06-01	F0706	37.6	17.2	54.9	5.7
HR-4DG1VZ-01	F0801	42.6	27.5	70.1	4.8
HR-NNPVN1-01	F0802	44.0	20.9	64.9	5.1
HR-RLSL30-01	F0803	25.9	14.9	40.8	6.9
HR-TCQCVX-01	F0804	27.3	22.0	49.3	6.1
HR-A2Y7GA-01	F0805	41.6	13.0	54.6	5.7
HR-CL3R00-01	F0806	38.3	24.0	62.3	5.2
Average	230x (Total)	23.8	19.2	43.0	6.7



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-01

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

Property

Address A0201, 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*	4.3	NatHERS climate zone
Total	50.9	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

32.1 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
11.8	20.3
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-KEX6GP-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	W01	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02	2700	2285	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	E	2783	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	2900	N	3382	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	11.9	2.50
INT-PB	Internal Plasterboard Stud Wall	75.4	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	10.9	N/A	0.00	Carpet
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	3.5	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
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed
Laundry	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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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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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-7RHIVQ-01

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

Property

Address A0202, 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*	84.3	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	88.1	56 - Mascot AMO
Garage	0.0	



Accredited assessor

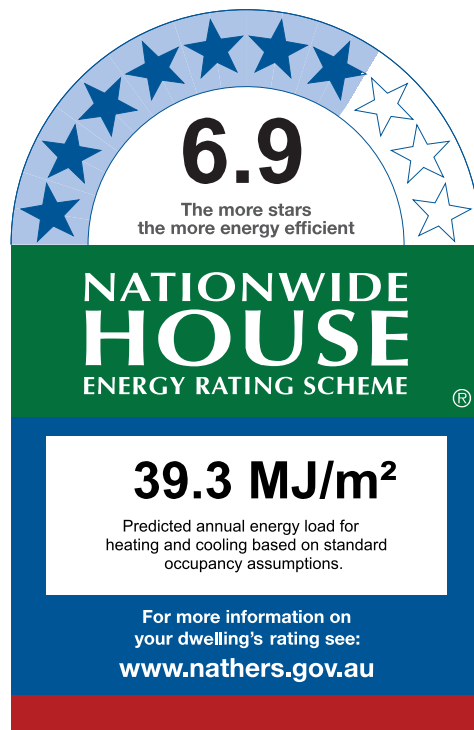
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
15.1	24.2
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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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	2520	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W08	2700	845	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W04	2700	2160	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	W09	2700	2200	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W10	2700	1590	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W11	2700	1800	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W12	2700	1800	Sliding	45	E	None
WIR	ALM-002-01 A	W06	2700	2560	Sliding	45	N	None
WIR	ALM-002-01 A	W05	2700	889	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				

* Refer to glossary.

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	3064	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2230	E	5668	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	N	2260	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1122	W		No
Ensuite	HEBEL-100-REFL-CAV1	2740	508	W		No
Entry	HEBEL-100-REFL-CAV1	2740	4469	E		No
Hallway	HEBEL-100-REFL-CAV1	2740	2792	S		No
Hallway	HEBEL-100-REFL-CAV1	2740	17	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5390	N	2251	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4676	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	10013	S		No
WIR	HEBEL-100-REFL-CAV1	2740	3048	N		Yes
WIR	HEBEL-100-REFL-CAV1	2740	1566	W	2818	Yes
WIR	HEBEL-100-REFL-CAV1	2740	211	S		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	82.3	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	3.8	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

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
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.4	N/A	0.00	Tile
WIR	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
Bedroom 01	1	Downlight	200	Sealed
Bedroom 02	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
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.





Explanatory Notes

About this report

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Glossary

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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-4HAWNB-01

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

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*	80.2	Suburban
Unconditioned*	4.2	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.

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
11.6	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-4HAWNB-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	W06	2700	2520	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W07	2700	2835	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W04	2700	1205	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	W05	2700	1970	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-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

* 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	3408	N	4164	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	3217	E		No
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	2032	S		No
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	4212	N		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	1355	E		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	1651	E	3827	No
Entry	HEBEL-100-REFL-CAV1-B	2740	889	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2477	E	3827	No
Study	HEBEL-100-REFL-CAV1-A	2740	2413	N		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	3.1	2.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.8	2.50
INT-PB	Internal Plasterboard Stud Wall	100.5	2.00
INT-PB	Internal Plasterboard Stud Wall	15.6	2.50

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	11.0	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	Tile
Entry	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	33.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	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	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
Entry	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.

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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-NSDK18-01

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

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*	69.0	Suburban
Unconditioned*	5.7	NatHERS climate zone
Total	74.6	56 - Mascot AMO
Garage	0.0	



Accredited assessor

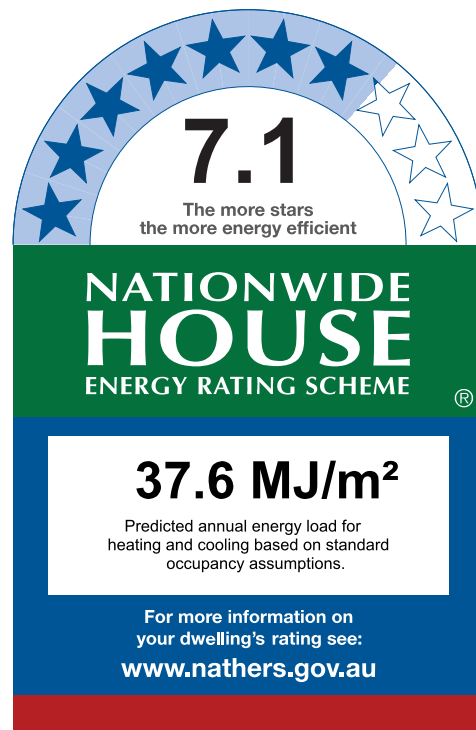
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
20.6	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-NSDK18-01>. 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	W04	2700	1990	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02	2700	910	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W03	2700	845	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	W05	2700	3110	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-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	3006	N	4168	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4128	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1587	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W	3043	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	87.8	2.00
INT-PB	Internal Plasterboard Stud Wall	13.2	2.50

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	13.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.4	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	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	2	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-H5ZX01-01

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

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*	73.0	Suburban
Unconditioned*	3.8	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.

7.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

27.6 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
5.3	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-H5ZX01-01>. 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	W01	2700	1485	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02	2700	1250	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04	2700	4720	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	845	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-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	3599	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5673	N	2323	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1058	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5715	W		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	102.7	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	14.0	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	3.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	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	32.4	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	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	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
None			

* Refer to glossary.

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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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-MMX6YV-01

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

Property

Address A0206, 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* 4.3	NatHERS climate zone
Total 50.9	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

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7.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

35.2 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
11.9	23.3
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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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-b	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02-b	2700	2285	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-b	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W	2783	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	2900	N	3381	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	74.4	2.00
INT-PB	Internal Plasterboard Stud Wall	11.9	2.50

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	10.9	N/A	0.00	Carpet
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	3.5	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
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed
Laundry	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

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.

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-FV6D97-01

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

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* 46.6	Suburban
Unconditioned* 4.3	NatHERS climate zone
Total 50.9	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.

7.5
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
12.1	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-FV6D97-01>. 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	W01	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02	2700	2285	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	E	2783	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	2900	N	3382	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	11.9	2.50
INT-PB	Internal Plasterboard Stud Wall	75.6	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	4.3	N/A	0.00	Tile
Bedroom 01	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	32.2	N/A	0.00	Tile
Laundry	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*
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
Laundry	1	Downlight	200	Sealed
Laundry	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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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.
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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-V2DUIL-01

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

Property

Address A0302, 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*	51.6	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	55.9	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.

7.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

26.6 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
11.2	15.4
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-V2DUIL-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	W01-b-a	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02-b-a	2700	2285	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-b-a	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W	2783	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	2900	N	3382	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	62.8	2.00
INT-PB	Internal Plasterboard Stud Wall	21.6	0.00
INT-PB	Internal Plasterboard Stud Wall	13.8	2.50

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	10.9	N/A	0.00	Carpet
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	4.7	N/A	0.00	Tile
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
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
Laundry	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Laundry	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

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-ZD6XES-01

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

Property

Address A0303, 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* 51.7	Suburban
Unconditioned* 4.3	NatHERS climate zone
Total 56.0	56 - Mascot AMO
Garage 0.0	



Accredited assessor

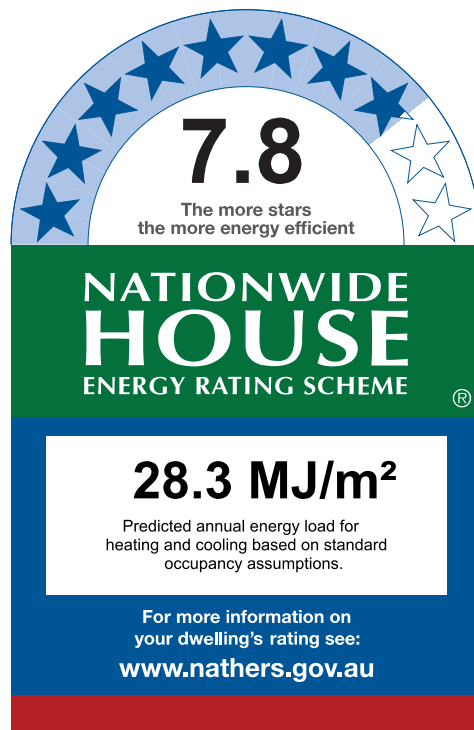
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
11.0	17.4
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-ZD6XES-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	W01-f	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02-f	2700	2285	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-i	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	E	2783	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	2900	N	3382	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	18.4	2.50
INT-PB	Internal Plasterboard Stud Wall	51.5	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	4.3	N/A	0.00	Tile
Bedroom 01	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	32.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
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
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
Laundry	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Laundry	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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Explanatory Notes

About this report

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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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-EJNPSS-01

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

Property

Address A0304, 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* 73.0	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 76.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

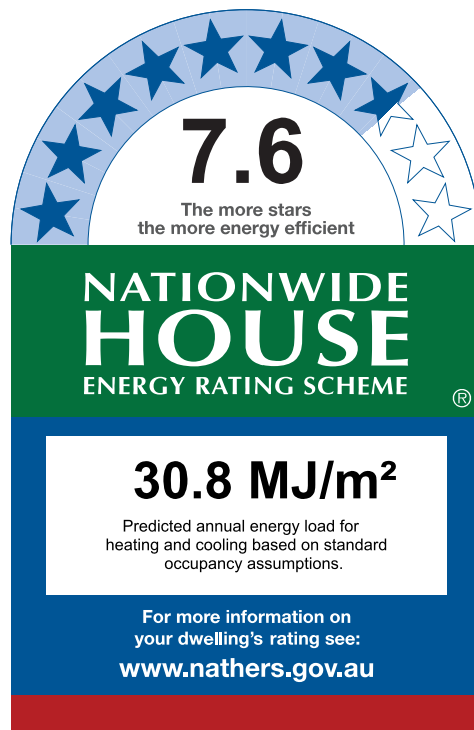
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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Thermal Performance

Heating	Cooling
4.4	26.4
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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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-k	2700	1485	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-k	2700	1250	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04-h	2700	3082	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-I	2700	845	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-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

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1-B	2740	2392	S		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	21	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	419	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	296	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	3599	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	3006	S		No
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	3006	E		No
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	21	S		No
Ensuite	HEBEL-100-REFL-CAV1-A	2740	2392	S		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	322	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	283	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	5673	N	2324	No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	1058	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	5715	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	17	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	76.8	2.00
INT-PB	Internal Plasterboard Stud Wall	11.5	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	Tile
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	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

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	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	32.4	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
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

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbptance	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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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

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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-QHJ80M-01

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

Property

Address A0305, 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* 80.2	Suburban
Unconditioned* 4.2	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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.6 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
8.4	25.2
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-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	W06	2700	2520	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W07	2700	2835	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W04	2700	1205	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	W05	2700	1970	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

* 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	3408	N	4164	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3217	E		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2032	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1651	E	3827	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	165	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2477	E	3827	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	11.5	2.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.8	2.50
INT-PB	Internal Plasterboard Stud Wall	112.6	2.00
INT-PB	Internal Plasterboard Stud Wall	3.3	0.00
INT-PB	Internal Plasterboard Stud Wall	15.6	2.50

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	11.0	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	Tile
Entry	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	33.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	0.00	Carpet

* 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
Entry	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.

Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-VSSC10-01

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

Property

Address A0306, 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* 69.0	Suburban
Unconditioned* 5.7	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.

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

7.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

37.9 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
21.2	16.7
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	W04	2700	1990	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02	2700	910	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W03	2700	845	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	W05	2700	3110	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-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	3006	N	4168	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4128	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1587	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W	3043	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	87.8	2.00
INT-PB	Internal Plasterboard Stud Wall	13.2	2.50

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	13.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.4	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	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	2	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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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-FX2CZA-01

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

Property

Address A0307, 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* 73.0	Suburban
Unconditioned* 3.8	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.

7.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

28.3 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
6.6	21.7
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-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	W01	2700	1485	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02	2700	1250	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04	2700	4720	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	845	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-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	3599	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5673	N	2323	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1058	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5715	W		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	102.7	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	14.0	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	3.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	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	32.4	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
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

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 - 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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-PAEB6M-01

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

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* 46.6	Suburban
Unconditioned* 4.3	NatHERS climate zone
Total 50.9	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.

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
12.3	22.8
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	W01-b	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02-b	2700	2285	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-b	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W	2783	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	2900	N	3381	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	74.4	2.00
INT-PB	Internal Plasterboard Stud Wall	11.9	2.50

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	10.9	N/A	0.00	Carpet
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	3.5	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
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed
Laundry	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.
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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.
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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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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-6ADEAW-01

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

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* 46.6	Open
Unconditioned* 4.3	NatHERS climate zone
Total 50.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

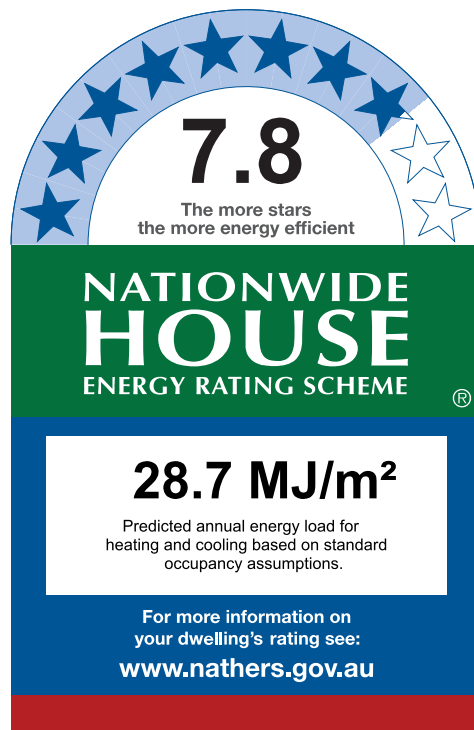
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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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Thermal Performance

Heating	Cooling
14.3	14.4
MJ/m ²	MJ/m ²

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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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Provisional* values

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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	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02	2700	2285	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	E	2783	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	2900	N	3382	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	11.9	2.50
INT-PB	Internal Plasterboard Stud Wall	75.6	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	4.3	N/A	0.00	Tile
Bedroom 01	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	32.2	N/A	0.00	Tile
Laundry	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*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
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Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed
Laundry	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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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JIUV8J-01

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

Property

Address A0402, 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*	51.6 Open
Unconditioned*	4.3 NatHERS climate zone
Total	55.9 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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8.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

25.2 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
13.8	11.5
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-b-a	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02-b-a	2700	2285	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-b-a	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W	2783	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	2900	N	3382	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	62.8	2.00
INT-PB	Internal Plasterboard Stud Wall	21.6	0.00
INT-PB	Internal Plasterboard Stud Wall	13.8	2.50

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	10.9	N/A	0.00	Carpet
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	4.7	N/A	0.00	Tile
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
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
Laundry	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Laundry	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.

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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.
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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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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-GW2UDC-01

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

Property

Address A0403, 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*	51.7 Open
Unconditioned*	4.3 NatHERS climate zone
Total	56.0 56 - Mascot AMO
Garage	0.0



Accredited assessor

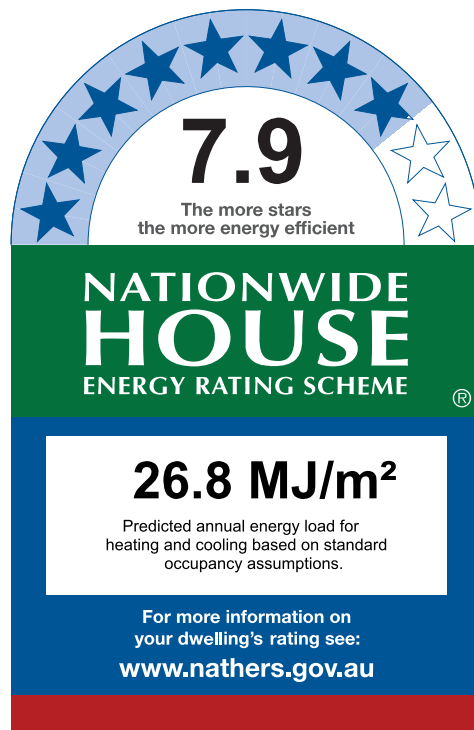
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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



Thermal Performance

Heating	Cooling
13.0	13.8
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-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* 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?

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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	W01-f	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02-f	2700	2285	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-i	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	E	2783	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	2900	N	3382	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	18.4	2.50
INT-PB	Internal Plasterboard Stud Wall	51.5	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	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Carpet
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Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
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
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
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Laundry	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Laundry	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 - 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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-QJMAG4-01

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

Property

Address A0404, 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*	73.0 Open
Unconditioned*	3.8 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.

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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
6.4	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-QJMAG4-01>. 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	W01-k	2700	1485	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-k	2700	1250	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04-h	2700	3082	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-I	2700	845	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-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

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1-B	2740	2392	S		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	21	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	419	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	296	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	3599	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	3006	S		No
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	3006	E		No
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	21	S		No
Ensuite	HEBEL-100-REFL-CAV1-A	2740	2392	S		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	322	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	283	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	5673	N	2324	No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	1058	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	5715	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	17	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	76.8	2.00
INT-PB	Internal Plasterboard Stud Wall	11.5	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	Tile
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	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

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	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	32.4	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
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

Ceiling fans

Location	Quantity	Diameter (mm)
None		

Roof type

Construction	Added insulation (R-value)	Solar absorbptance	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

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-R9YXH1-01

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

Property

Address A0405, 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* 80.2	Open
Unconditioned* 4.2	NatHERS climate zone
Total 84.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

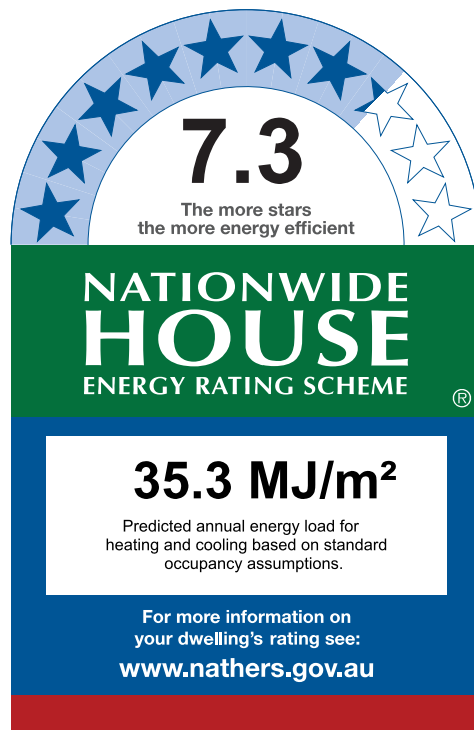
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
10.3	24.9
MJ/m ²	MJ/m ²

About the rating

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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.

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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	W06	2700	2520	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W07	2700	2835	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W04	2700	1205	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	W05	2700	1970	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

* 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	3408	N	4164	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3217	E		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2032	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1651	E	3827	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	165	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2477	E	3827	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	11.5	2.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.8	2.50
INT-PB	Internal Plasterboard Stud Wall	112.6	2.00
INT-PB	Internal Plasterboard Stud Wall	3.3	0.00
INT-PB	Internal Plasterboard Stud Wall	15.6	2.50

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	11.0	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	Tile
Entry	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	33.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	0.00	Carpet

* 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
Entry	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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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-ICAKPE-01

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

Property

Address A0406, 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* 69.0	Open
Unconditioned* 5.7	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.

7.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

36.7 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
24.7	12.0
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-ICAKPE-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	W04	2700	1990	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02	2700	910	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W03	2700	845	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	W05	2700	3110	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-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	3006	N	4168	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4128	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1587	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W	3043	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	87.8	2.00
INT-PB	Internal Plasterboard Stud Wall	13.2	2.50

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	13.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.4	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	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
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-DTWRSG-01

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

Property

Address A0407, 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*	73.0 Open
Unconditioned*	3.8 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.

8.0
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
9.3	16.6
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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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	1485	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02	2700	1250	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04	2700	4720	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	845	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-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	3599	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5673	N	2323	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1058	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5715	W		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	102.7	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	14.0	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	3.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	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	32.4	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
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

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.

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-OPRWPW-01

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

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*	46.6 Open
Unconditioned*	4.3 NatHERS climate zone
Total	50.9 56 - Mascot AMO
Garage	0.0



Accredited assessor

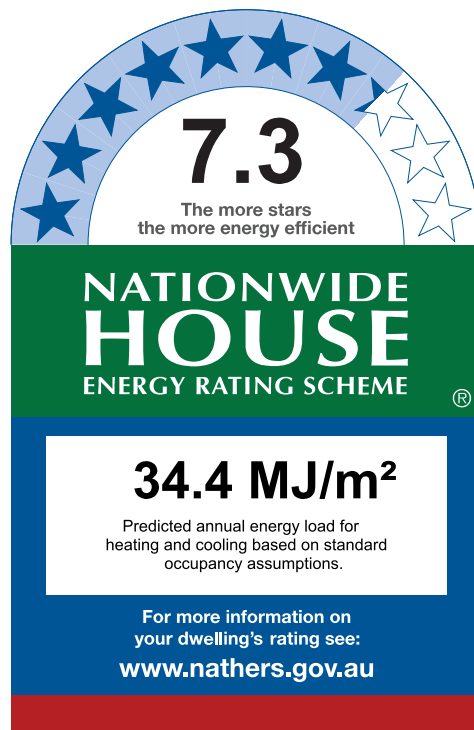
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
15.3	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-OPRWPW-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	W01-b	2700	2560	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02-b	2700	2285	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-b	2700	2200	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	3054	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W	2783	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	2900	N	3381	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	74.4	2.00
INT-PB	Internal Plasterboard Stud Wall	11.9	2.50

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	10.9	N/A	0.00	Carpet
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	3.5	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
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed
Laundry	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

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

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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-71PPQJ-01

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

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* 68.3	Open
Unconditioned* 3.6	NatHERS climate zone
Total 71.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

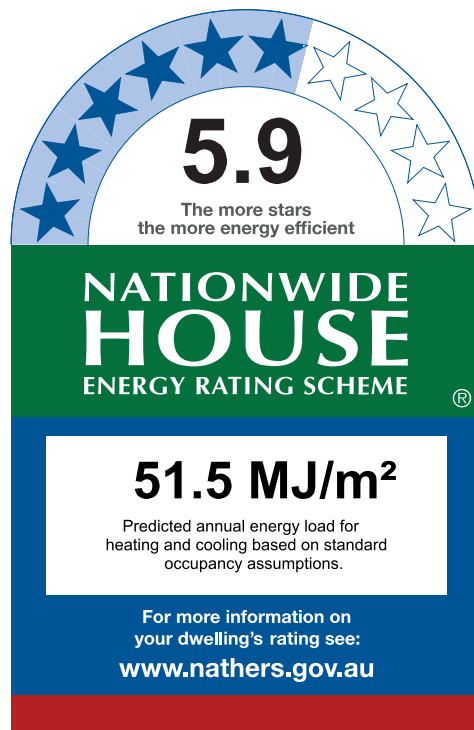
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
28.7	22.8
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	2350	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W02	2700	2645	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	3005	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	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	275	E		No
Bathroom	HEBEL-100-REFL-CAV1	2740	267	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	HEBEL-100-REFL-CAV1	2740	3048	N	3243	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	N	3243	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	N	3243	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	68.0	2.00
INT-PB	Internal Plasterboard Stud Wall	60.8	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	3.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	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	3.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.4	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	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

* 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	2.50	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
WIR	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
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	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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

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

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

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Glossary

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-YQDCV8-01

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

Property

Address A0502, 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* 96.4	Open
Unconditioned* 4.3	NatHERS climate zone
Total 100.8	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.

5.8
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
38.0	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-YQDCV8-01>. 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	W06	2700	2415	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	1290	Sliding	45	N	None
Bedroom 03	ALM-002-01 A	W01	2700	2305	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	3155	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W04	2700	2455	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W05	2700	890	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-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	3260	E	1956	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	3006	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	1646	N	3243	Yes
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	2963	N	3243	Yes
Ensuite	HEBEL-100-REFL-CAV1-A	2740	406	S		Yes
Entry Hallway	HEBEL-100-REFL-CAV1-B	2740	339	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	N	3243	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	8045	E	1956	Yes
WIR	HEBEL-100-REFL-CAV1-A	2740	2160	S		Yes
WIR	HEBEL-100-REFL-CAV1-A	2740	21	W		Yes
WIR	HEBEL-100-REFL-CAV1-A	2740	191	N		Yes
WIR	HEBEL-100-REFL-CAV1-A	2740	106	W		Yes
WIR	HEBEL-100-REFL-CAV1-A	2740	186	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	56.0	2.00
INT-PB	Internal Plasterboard Stud Wall	90.6	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	4.3	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	16.7	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	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 Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	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
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	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	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
Bedroom 03	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
Entry 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
WIR	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
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Entry Hallway	1	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	0.00	0.50	Medium

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-J3VKRO-01

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

Property

Address A0504, 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* 80.2	Open
Unconditioned* 4.2	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

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The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

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

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Thermal Performance

Heating	Cooling
28.4	27.3
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

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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	W06	2700	2520	Sliding	45	N	None
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Bedroom 02	ALM-002-01 A	W04	2700	1205	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	W05	2700	1970	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3408	N	4164	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3217	E	310	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1200	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1651	E	3824	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	165	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2477	E	3824	No
Study	HEBEL-100-REFL-CAV1	2740	338	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	76.3	2.00
INT-PB	Internal Plasterboard Stud Wall	68.6	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	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	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	Tile
Entry	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	33.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	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	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
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
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
WIR	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
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	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		

* 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	0.00	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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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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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-DIYBLR-01

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

Property

Address A0505, 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* 69.0	Open
Unconditioned* 5.7	NatHERS climate zone
Total 74.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

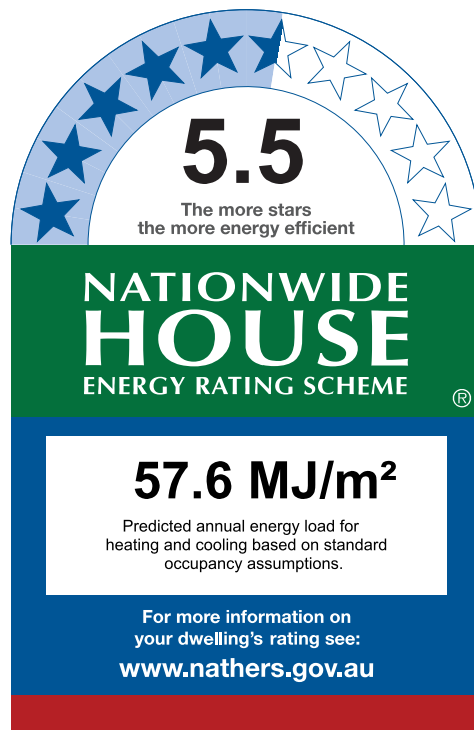
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
38.0	19.6
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-DIYBLR-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	W04	2700	1990	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W02	2700	910	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W03	2700	845	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	W05	2700	3110	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-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	N	4168	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4128	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1587	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W	3043	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	58.8	2.00
INT-PB	Internal Plasterboard Stud Wall	42.2	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	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.4	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	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	2.50	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	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	2.50	No
Ensuite	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
Laundry	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
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	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	0.00	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.
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-WB18MP-01

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

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* 63.8	Open
Unconditioned* 6.6	NatHERS climate zone
Total 70.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

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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.

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 your dwelling's rating see:
www.nathers.gov.au

Thermal Performance

Heating	Cooling
34.8	20.0
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-WB18MP-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	W01	2700	1480	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02	2700	1460	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W04	2700	4655	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	890	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-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	W		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2960	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2985	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5631	N	3243	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5250	W		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	49.5	2.00
INT-PB	Internal Plasterboard Stud Wall	49.1	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	13.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.00	Tile
Hallway	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	29.6	N/A	0.00	Tile
WC	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	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	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
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	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	2.50	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
WC	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
Entry	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	4	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
WC	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

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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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-UEGHBQ-01

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

Property

Address A0507, 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
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Unconditioned* 4.3	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

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5.8
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NATIONWIDE HOUSE
ENERGY RATING SCHEME

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

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Thermal Performance

Heating	Cooling
24.5	29.0
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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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	2700	890	Casement	90	N	None
Bedroom 01	ALM-002-01 A	W03	2700	1290	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	3345	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	3662	N	3243	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	N	3243	No

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	62.7	2.00
INT-PB	Internal Plasterboard Stud Wall	21.1	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	11.9	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	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

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
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Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No

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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
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

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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).

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-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

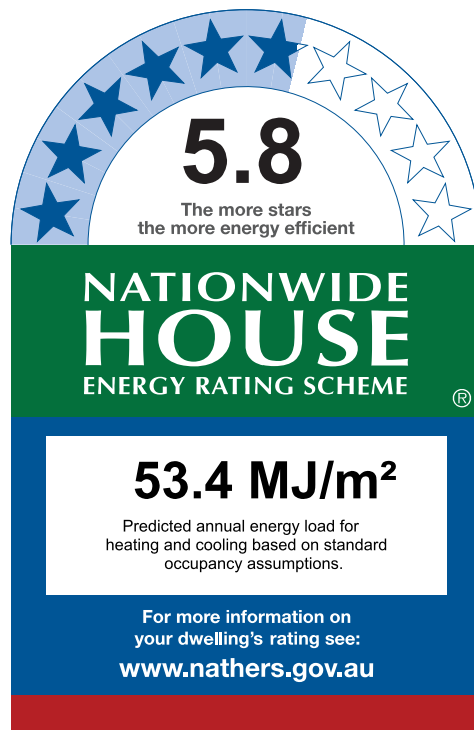
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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

* 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	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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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-01

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

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*	75.6	Suburban
Unconditioned*	4.7	NatHERS climate zone
Total	80.3	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

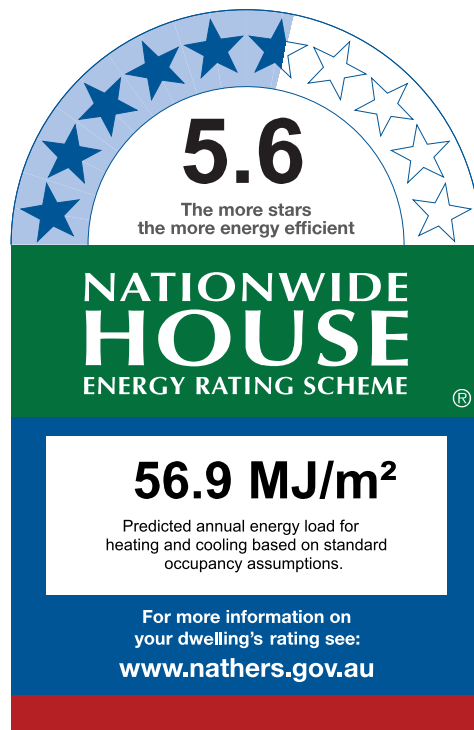
Declaration of interest No Conflict of Interest

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
45.0	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

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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-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	2350	Sliding	45	W	None
Bedroom 01	ALM-003-01 A	W04	2700	1545	Sliding	45	N	None
Bedroom 02	ALM-003-01 A	W02	2700	2500	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*
Bedroom 02	ALM-003-01 A	W01	2700	2900	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W03	2700	2245	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-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	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-100-REFL-CAV1	2740	3070	W	2020	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2498	N	14581	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3472	N	7526	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	233	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	247	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S	6726	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3281	W	1406	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3726	W	4518	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	572	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5420	N		Yes
Laundry	HEBEL-100-REFL-CAV1	2740	317	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	103.8	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	4.7	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.0	N/A	0.96	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.96	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.96	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.5	N/A	0.96	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	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
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	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.

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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.
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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).

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-BPLRIL-01

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

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*	86.0	Suburban
Unconditioned*	4.0	NatHERS climate zone
Total	89.9	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.

6.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

44.8 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
28.9	15.9
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-BPLRIL-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	W01	2700	1250	Sliding	45	E	None
Bedroom 02	ALM-003-01 A	W02	2700	2330	Sliding	45	E	None
Kitchen/Living	ALM-003-01 A	W03	2700	4255	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
Bathroom	HEBEL-100-REFL-CAV1	2740	402	S		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	296	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	5144	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1524	E	5467	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3087	E	3157	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2310	N	1689	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1609	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5652	E	2387	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1796	N	4880	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	121.8	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	4.0	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	0.96	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.96	Carpet
Centre	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.96	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.96	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.3	N/A	0.96	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.96	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Centre	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
Study	2	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) 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

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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-79B8KS-01

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

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*	84.5	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	88.8	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

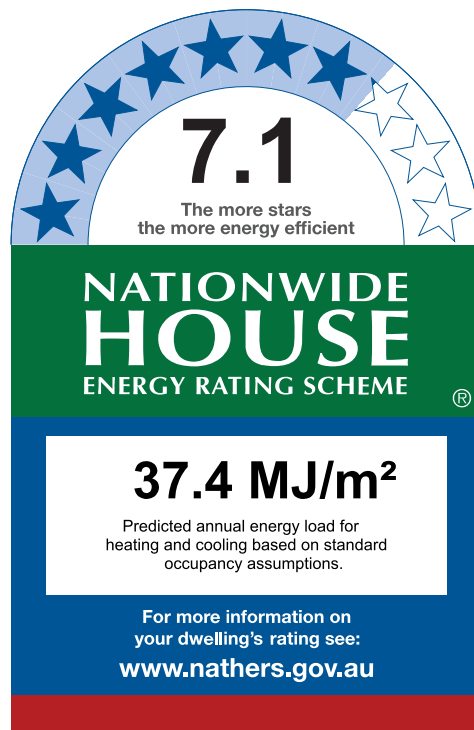
Declaration of interest No Conflict of Interest

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
22.9	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

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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-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	W01	2700	1015	Sliding	45	E	None
Bedroom 02	ALM-003-01 A	W02	2700	2455	Sliding	45	E	None
Kitchen/Living	ALM-003-01 A	W04	2700	2200	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-003-01 A	W03	2700	1905	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-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	1192	E	6366	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	E	3233	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3133	N	1382	Yes
Entry	HEBEL-100-REFL-CAV1	2740	275	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	296	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3999	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2730	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3217	N	5088	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	140.1	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	4.3	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.2	N/A	0.96	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.96	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	N/A	0.96	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.3	N/A	0.96	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	27.6	N/A	0.96	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	6.2	N/A	0.96	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	0.96	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.96	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	1	Downlight	100	Sealed
Bedroom 02	2	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
WIR	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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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-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

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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.
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-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

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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.

5.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

55.5 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
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

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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.
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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-BTCTAJ-01

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

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*	50.2	Suburban
Unconditioned*	5.6	NatHERS climate zone
Total	55.9	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.

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
24.5	29.2
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-BTCTAJ-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 02	ALM-002-01 A	W03	2700	2160	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	1505	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2265	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	0.32	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
INT-PB	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.50	No

* 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-A	2740	2943	W	3077	Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	318	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	291	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	86	N		Yes
Entry	INT-PB	2740	148	N		Yes
Entry	INT-PB	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1149	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3641	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3048	S	2871	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	37.4	2.50
INT-PB	Internal Plasterboard Stud Wall	64.5	2.00
INT-PB	Internal Plasterboard Stud Wall	0.7	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	5.6	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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	23.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	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 02	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Entry	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	3	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			

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Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JRIH84-01

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

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*	72.2	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	76.0	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

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7.5
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the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

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MJ/m ²	MJ/m ²

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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-002-03 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-002-03 A	W05-b	2700	2350	Sliding	45	W	None
Bedroom 02	ALM-002-03 A	W02-c	2700	2500	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W03-c	2700	2245	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-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.50	Yes
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes
HEBEL-100-REFL-CAV1-C	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-A	2740	3070	W	1156	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1350	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3006	S	6729	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3726	W	2505	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	11	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	334	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	284	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-C	2740	423	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	109	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	15	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	15	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	14	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	14	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	14	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	13	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	13	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	13	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	12	S		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	15.4	2.50
INT-PB	Internal Plasterboard Stud Wall	65.9	2.00
INT-PB	Internal Plasterboard Stud Wall	45.8	2.50

* Refer to glossary.

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	13.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.8	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
Bedroom 02	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

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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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-0C2UDN-01

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

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* 107.4	Suburban
Unconditioned* 4.1	NatHERS climate zone
Total 111.5	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

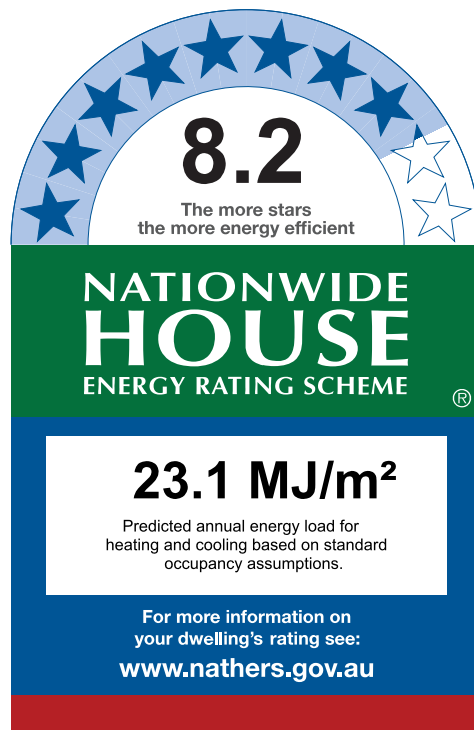
Declaration of interest No Conflict of Interest

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
10.2	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-0C2UDN-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	W01	2700	1270	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	2540	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04	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	W03	2700	2435	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-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	0.32	Light (Surfmist)	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
Bathroom	HEBEL-100-REFL-CAV1-A	2740	317	S		No
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	1524	E	6122	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2985	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3937	S		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3069	E	3232	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2921	N	1689	Yes
Ensuite	HEBEL-100-REFL-CAV1-A	2740	402	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	28	SSE		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	317	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	85	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4276	N	4858	Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	191	W		Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	106	N		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	1926	S		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	96.3	2.00
INT-PB	Internal Plasterboard Stud Wall	60.4	2.50

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	12.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.2	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-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	39.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	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	4	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
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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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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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-VLWLHC-01

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

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*	78.6	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	82.8	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

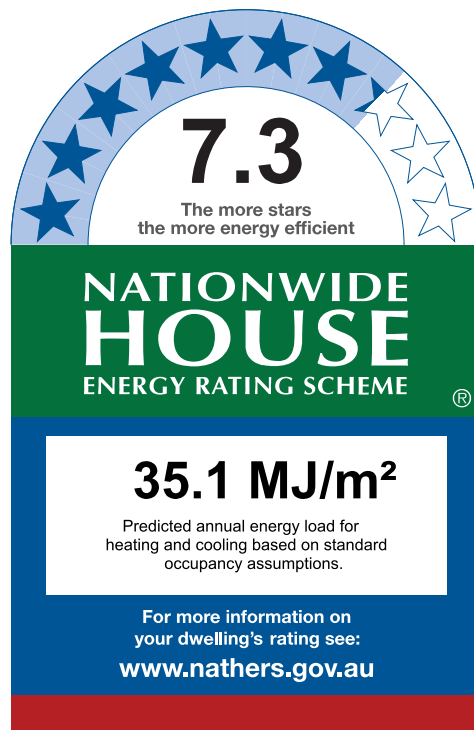
Declaration of interest No Conflict of Interest

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
18.2	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-VLWLHC-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	W01-j	2700	1015	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-j	2700	2455	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04-f	2700	2200	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-h	2700	1905	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-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
Bathroom	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1192	E	6366	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	E	3764	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2602	N	1382	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3999	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2730	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3748	N	5088	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2646	S		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	14.9	2.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.2	2.50
INT-PB	Internal Plasterboard Stud Wall	97.3	2.00
INT-PB	Internal Plasterboard Stud Wall	17.0	2.50

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	10.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	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	3.0	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	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	3.9	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
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	1	Downlight	100	Sealed
Bedroom 02	2	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
WIR	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) 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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-GS2WWA-01

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

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*	76.8	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	80.7	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

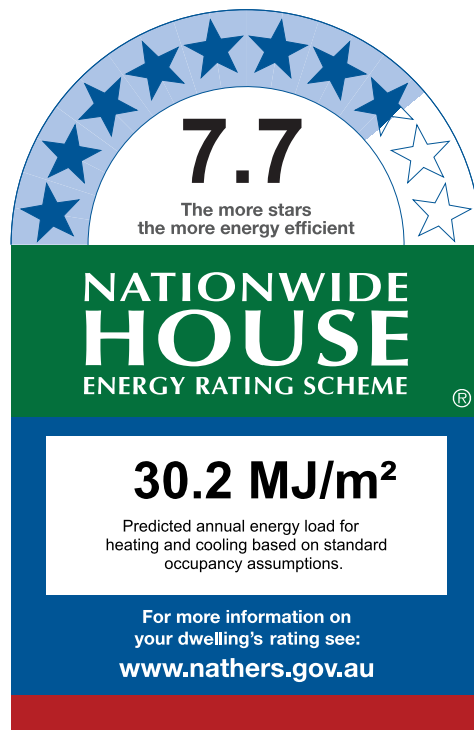
Declaration of interest No Conflict of Interest

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



Thermal Performance

Heating	Cooling
2.7	27.5
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	W05	2700	1060	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01	2700	1755	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06	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
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	1587	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	W		No

* 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	1948	S		No
Entry	HEBEL-100-REFL-CAV1	2740	171	W		No
Entry	HEBEL-100-REFL-CAV1	2740	122	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2611	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	94.6	2.00
INT-PB	Internal Plasterboard Stud Wall	46.9	2.50
INT-PB	Internal Plasterboard Stud Wall	14.1	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	13.6	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	4.5	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	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
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	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	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	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

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.

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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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-ACICVA-01

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

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*	49.1	Suburban
Unconditioned*	5.6	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.

7.5
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
12.6	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-ACICVA-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	W01	2700	2095	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2455	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	1505	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	910	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	3006	W	3077	No
Entry	HEBEL-100-REFL-CAV1	2740	331	N		No
Entry	HEBEL-100-REFL-CAV1	2740	324	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3048	N	3067	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3641	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	S		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.3	2.00
INT-PB	Internal Plasterboard Stud Wall	59.7	2.00
INT-PB	Internal Plasterboard Stud Wall	15.6	2.50
INT-PB	Internal Plasterboard Stud Wall	8.1	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	13.0	N/A	0.00	Carpet
Entry	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	30.6	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	Downlight	200	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
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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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-Y3UWJS-01

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

Property

Address B0301, 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* 50.2	Suburban
Unconditioned* 5.6	NatHERS climate zone
Total 55.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

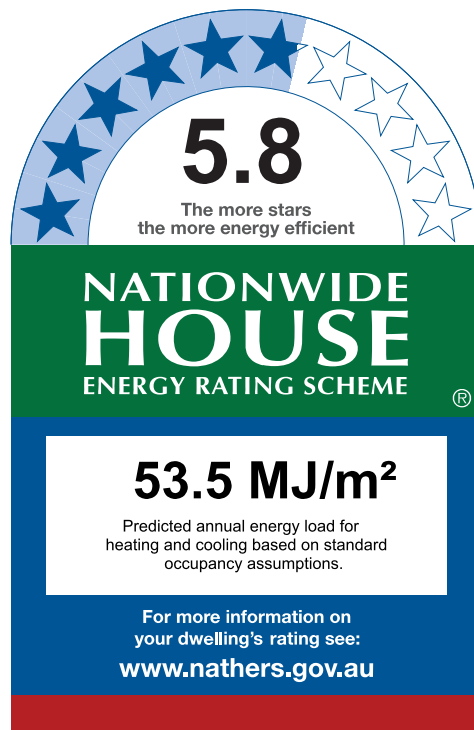
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
25.3	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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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 02	ALM-002-01 A	W03	2700	2160	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	1505	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2265	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	0.32	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
INT-PB-A	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.50	No
INT-PB-B	INT-PB: Internal Plasterboard Stud Wall	0.50	Medium	2.50	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2943	W	3077	Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	318	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	291	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	86	N		Yes
Entry	INT-PB-A	2740	148	N		Yes
Entry	INT-PB-A	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB-A	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB-A	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB-A	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB-A	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	INT-PB-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	13	N		Yes
Entry	INT-PB-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1149	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3641	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3048	S	2871	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	37.4	2.50
INT-PB	Internal Plasterboard Stud Wall	64.2	2.00
INT-PB	Internal Plasterboard Stud Wall	0.7	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	5.6	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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	23.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	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 02	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	3	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.

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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

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-YU11AL-01

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

Property

Address B0302, 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*	72.2	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	76.0	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.

7.4
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
15.9	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-YU11AL-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-002-03 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-002-03 A	W05-b	2700	2350	Sliding	45	W	None
Bedroom 02	ALM-002-03 A	W02-c	2700	2500	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W03-c	2700	2245	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-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.50	Yes
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes
HEBEL-100-REFL-CAV1-C	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-A	2740	3070	W	1156	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1350	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3006	S	6729	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3726	W	2505	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	11	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	334	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	284	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	246	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-C	2740	127	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-C	2740	296	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	12	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	13	S		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	15.4	2.50
INT-PB	Internal Plasterboard Stud Wall	65.7	2.00
INT-PB	Internal Plasterboard Stud Wall	45.8	2.50

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	13.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.8	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	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	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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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-YJHI37-01

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

Property

Address B0303, 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* 107.4	Suburban
Unconditioned* 4.1	NatHERS climate zone
Total 111.5	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.

8.2
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
10.7	12.7
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-YJHI37-01>. 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	W01	2700	1270	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	2540	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04	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	W03	2700	2435	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-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	0.32	Light (Surfmist)	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
Bathroom	HEBEL-100-REFL-CAV1-A	2740	317	S		No
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	1524	E	6122	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2985	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3937	S		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3069	E	3232	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2921	N	1689	Yes
Ensuite	HEBEL-100-REFL-CAV1-A	2740	402	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	28	SSE		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	317	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	85	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4276	N	4858	Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	191	W		Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	106	N		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	1926	S		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	96.3	2.00
INT-PB	Internal Plasterboard Stud Wall	60.4	2.50

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	12.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.2	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-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	39.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	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	4	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
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 absorbptance	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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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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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-ZWSNJD-01

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

Property

Address B0304, 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*	78.6	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	82.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

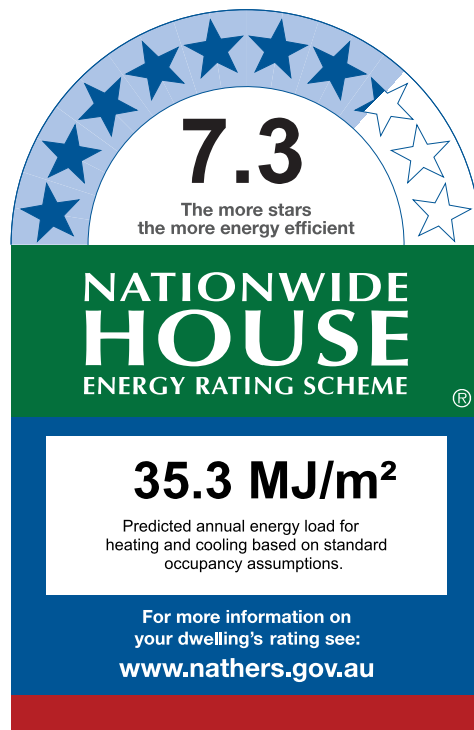
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
18.7	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-ZWSNJD-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	W01-j	2700	1015	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-j	2700	2455	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04-f	2700	2200	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-h	2700	1905	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-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	317	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1192	E	6366	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	E	3764	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2602	N	1382	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3999	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2730	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3748	N	5088	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2646	S		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	4.4	0.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	14.9	2.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.2	2.50
INT-PB	Internal Plasterboard Stud Wall	92.9	2.00
INT-PB	Internal Plasterboard Stud Wall	17.0	2.50

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	10.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	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	3.0	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	3.7	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*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	1	Downlight	100	Sealed
Bedroom 02	2	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
WIR	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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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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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-9ZNQNH-01

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

Property

Address B0305, 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* 76.8	Suburban
Unconditioned* 3.9	NatHERS climate zone
Total 80.7	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

29.6 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
3.0	26.7
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-9ZNQNH-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	W05	2700	1060	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01	2700	1755	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06	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
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	1587	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	W		No

* 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	1948	S		No
Entry	HEBEL-100-REFL-CAV1	2740	171	W		No
Entry	HEBEL-100-REFL-CAV1	2740	122	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2611	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	4.4	0.00
INT-PB	Internal Plasterboard Stud Wall	90.2	2.00
INT-PB	Internal Plasterboard Stud Wall	46.9	2.50
INT-PB	Internal Plasterboard Stud Wall	14.1	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	13.6	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	4.5	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	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
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	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
Entry	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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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-TGGTRK-01

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

Property

Address B0306, 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* 49.1	Suburban
Unconditioned* 5.6	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.

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
13.3	18.5
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.

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	2095	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2455	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	1505	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	910	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	3077	No
Entry	HEBEL-100-REFL-CAV1	2740	331	N		No
Entry	HEBEL-100-REFL-CAV1	2740	324	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3048	N	3067	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3641	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	S		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.3	2.00
INT-PB	Internal Plasterboard Stud Wall	59.7	2.00
INT-PB	Internal Plasterboard Stud Wall	15.6	2.50
INT-PB	Internal Plasterboard Stud Wall	8.1	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	13.0	N/A	0.00	Carpet
Entry	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	30.6	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	Downlight	200	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
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-WQBFSH-01

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

Property

Address B0401, 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*	50.2	Open
Unconditioned*	5.6	NatHERS climate zone
Total	55.9	56 - Mascot AMO
Garage	0.0	



Accredited assessor

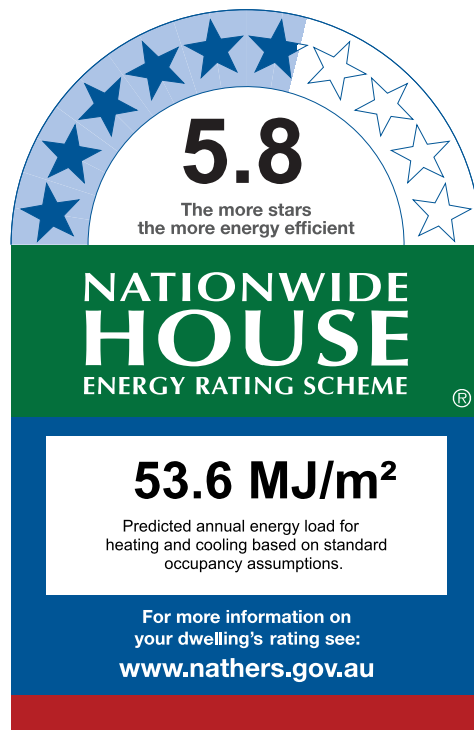
Name Duncan Hope
Business name Senica Consultancy Group
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Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
29.7	23.9
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-WQBFSH-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 02	ALM-002-01 A	W03	2700	2160	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	1505	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2265	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	0.32	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
INT-PB-A	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.50	No
INT-PB-B	INT-PB: Internal Plasterboard Stud Wall	0.50	Medium	2.50	No

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2943	W	3077	Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	318	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	291	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	86	N		Yes
Entry	INT-PB-A	2740	148	N		Yes
Entry	INT-PB-A	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB-A	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	15	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB-A	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB-A	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	INT-PB-A	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	INT-PB-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	INT-PB-A	2740	13	N		Yes
Entry	INT-PB-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1149	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3641	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3048	S	2871	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	37.4	2.50
INT-PB	Internal Plasterboard Stud Wall	64.2	2.00
INT-PB	Internal Plasterboard Stud Wall	0.7	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	5.6	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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	23.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	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 02	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	3	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) 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).
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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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* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-WZ2KG4-01

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

Property

Address B0402, 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*	72.2 Open
Unconditioned*	3.8 NatHERS climate zone
Total	76.0 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

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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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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
18.9	13.9
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-002-03 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-002-03 A	W05-b	2700	2350	Sliding	45	W	None
Bedroom 02	ALM-002-03 A	W02-c	2700	2500	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W03-c	2700	2245	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-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.50	Yes
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes
HEBEL-100-REFL-CAV1-C	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-A	2740	3070	W	1156	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1350	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3006	S	6729	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3726	W	2505	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	11	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	334	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	284	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	246	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-C	2740	127	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-C	2740	296	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	12	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	13	S		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	15.4	2.50
INT-PB	Internal Plasterboard Stud Wall	65.7	2.00
INT-PB	Internal Plasterboard Stud Wall	45.8	2.50

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	13.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.8	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
Bedroom 02	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

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.

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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-5ST2MQ-01

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

Property

Address B0403, 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* 107.4	Open
Unconditioned* 4.1	NatHERS climate zone
Total 111.5	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.

8.2
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
13.1	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-5ST2MQ-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	W01	2700	1270	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	2540	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04	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	W03	2700	2435	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-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	0.32	Light (Surfmist)	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
Bathroom	HEBEL-100-REFL-CAV1-A	2740	317	S		No
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	1524	E	6122	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2985	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3937	S		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3069	E	3232	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2921	N	1689	Yes
Ensuite	HEBEL-100-REFL-CAV1-A	2740	402	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	28	SSE		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	317	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	85	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4276	N	4858	Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	191	W		Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	106	N		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	1926	S		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	96.3	2.00
INT-PB	Internal Plasterboard Stud Wall	60.4	2.50

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	12.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.2	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile

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Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	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	39.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	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	4	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
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			

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Explanatory Notes

About this report

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-AMAI4O-01

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

Property

Address B0404, 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* 78.6	Open
Unconditioned* 4.2	NatHERS climate zone
Total 82.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

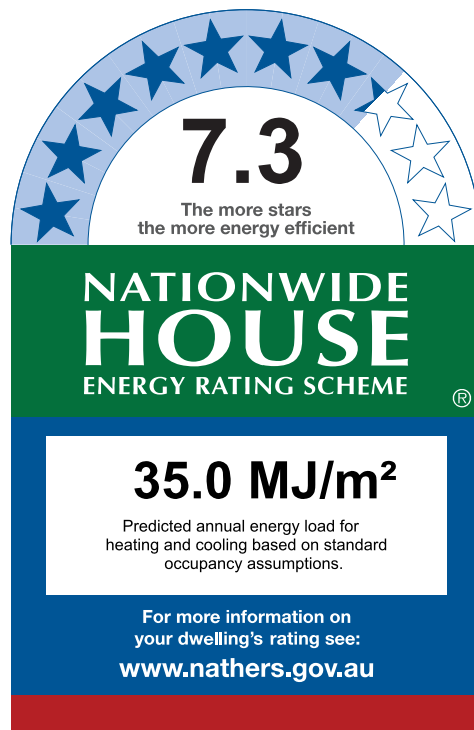
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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



Thermal Performance

Heating	Cooling
22.2	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.

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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	W01-j	2700	1015	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-j	2700	2455	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04-f	2700	2200	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-h	2700	1905	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-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
Bathroom	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1192	E	6366	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	E	3764	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2602	N	1382	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3999	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2730	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3748	N	5088	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2646	S		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	4.4	0.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	14.9	2.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.2	2.50
INT-PB	Internal Plasterboard Stud Wall	92.9	2.00
INT-PB	Internal Plasterboard Stud Wall	17.0	2.50

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	10.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.1	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	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	3.0	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	3.7	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*
None			

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	1	Downlight	100	Sealed
Bedroom 02	2	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
WIR	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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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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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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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-1S0397-01

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

Property

Address B0405, 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* 76.8	Open
Unconditioned* 3.9	NatHERS climate zone
Total 80.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

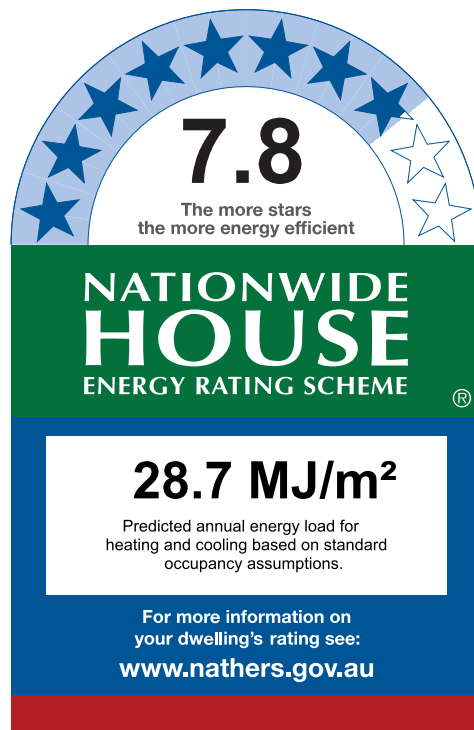
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
5.0	23.8
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-1S0397-01>. 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	W05	2700	1060	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01	2700	1755	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06	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
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	1587	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	W		No

* 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	1948	S		No
Entry	HEBEL-100-REFL-CAV1	2740	171	W		No
Entry	HEBEL-100-REFL-CAV1	2740	122	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2611	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	4.4	0.00
INT-PB	Internal Plasterboard Stud Wall	90.2	2.00
INT-PB	Internal Plasterboard Stud Wall	46.9	2.50
INT-PB	Internal Plasterboard Stud Wall	14.1	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	13.6	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	4.5	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	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
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	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
Entry	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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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-Z69FBN-01

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

Property

Address B0406, 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*	49.1 Open
Unconditioned*	5.6 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.

7.5
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

31.6 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
17.7	13.8
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-Z69FBN-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	W01	2700	2095	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2455	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	1505	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	910	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	3077	No
Entry	HEBEL-100-REFL-CAV1	2740	331	N		No
Entry	HEBEL-100-REFL-CAV1	2740	324	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3048	N	3067	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3641	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	S		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.3	2.00
INT-PB	Internal Plasterboard Stud Wall	59.7	2.00
INT-PB	Internal Plasterboard Stud Wall	15.6	2.50
INT-PB	Internal Plasterboard Stud Wall	8.1	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	13.0	N/A	0.00	Carpet
Entry	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	30.6	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	Downlight	200	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
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.
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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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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-N9UXQX-01

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

Property

Address B0501, 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*	50.2	Open
Unconditioned*	5.6	NatHERS climate zone
Total	55.9	56 - Mascot AMO
Garage	0.0	



Accredited assessor

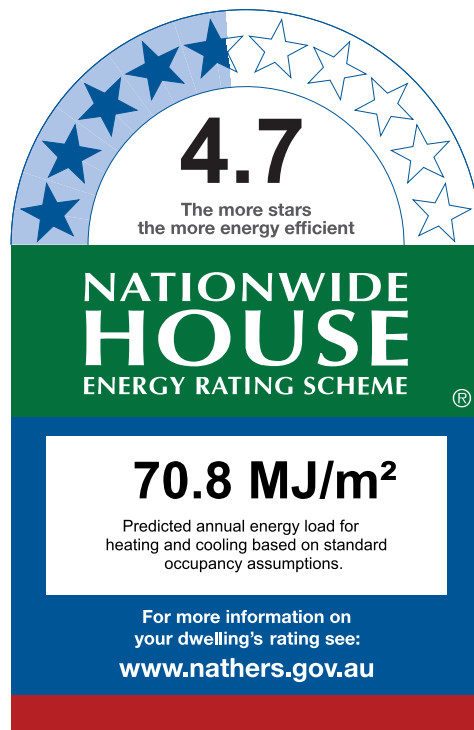
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
42.8	28.0
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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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	2160	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	1505	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2265	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	0.32	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 02	HEBEL-100-REFL-CAV1-A	2740	2943	W	3077	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	HEBEL-100-REFL-CAV1-A	2740	318	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	291	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	37	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	38	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	25	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	25	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	50	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	25	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	90	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	14	N		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	184	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1149	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3641	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3048	S	2871	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.1	2.00
INT-PB	Internal Plasterboard Stud Wall	43.0	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	5.6	N/A	0.00	Tile

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	12.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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	23.7	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	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	2.50	No
Bedroom 02	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
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
Study	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
Bedroom 02	2	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	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	0.00	0.50	Medium

* 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.
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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).

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-6UJOR5-01

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

Property

Address B0502, 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* 72.2	Open
Unconditioned* 3.8	NatHERS climate zone
Total 76.0	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

53.6 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
32.8	20.8
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-6UJOR5-01>. 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-002-03 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-002-03 A	W05-b	2700	2350	Sliding	45	W	None
Bedroom 02	ALM-002-03 A	W02-c	2700	2500	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W03-c	2700	2245	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	3070	W	1178	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1350	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-100-REFL-CAV1	2740	3006	S	6751	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3726	W	2527	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	11	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	334	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	284	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	423	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	485	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	83.7	2.00
INT-PB	Internal Plasterboard Stud Wall	42.7	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	13.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.8	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
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

* 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	2.50	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	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	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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

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

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

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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

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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-BCTAX6-01

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

Property

Address B0503, 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* 92.0	Open
Unconditioned* 0.0	NatHERS climate zone
Total 92.0	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.

6.0
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

50.9 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	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

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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	2700	1242	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W03	2700	2160	Casement	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	2540	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	W04	2700	3385	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-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

* 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	1524	E	5312	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2985	E	3064	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2314	S		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3069	E	3232	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2089	N	1689	Yes
Ensuite	HEBEL-100-REFL-CAV1-A	2740	402	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E	3056	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	12	SE		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	317	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1234	N	4853	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	26	S		Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	191	W		Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	106	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	68.7	2.00
INT-PB	Internal Plasterboard Stud Wall	80.4	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	13.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	26.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.00	Tile
Entry	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	26.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	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	6.7	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	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
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
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	4	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
Pantry	1	Downlight	200	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	0.00	0.50	Medium

* 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.
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-PDB7Z0-01

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

Property

Address B0504, 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*	73.2 Open
Unconditioned*	0.0 NatHERS climate zone
Total	73.2 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.

6.1
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
31.8	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-PDB7Z0-01>. 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	W01-j	2700	656	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-j	2700	2455	Sliding	45	E	None
Kitchen/Living 26	ALM-002-01 A	W03	2700	3365	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-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	1192	E	5347	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-B	2740	3598	E	3340	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	30	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	2006	N	1146	Yes
Kitchen/Living 26	HEBEL-100-REFL-CAV1-B	2740	321	S		No
Kitchen/Living 26	HEBEL-100-REFL-CAV1-B	2740	4001	E	3346	No
Kitchen/Living 26	HEBEL-100-REFL-CAV1-B	2740	2015	S	8670	Yes
Kitchen/Living 26	HEBEL-100-REFL-CAV1-B	2740	292	W		No
Kitchen/Living 26	HEBEL-100-REFL-CAV1-B	2740	24	N		Yes
WIR	HEBEL-100-REFL-CAV1-A	2740	45	N		Yes
WIR	HEBEL-100-REFL-CAV1-A	2740	28	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	61.3	2.00
INT-PB	Internal Plasterboard Stud Wall	52.8	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	11.9	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	5.4	N/A	0.00	Tile
Kitchen/Living 26	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.5	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	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	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
Kitchen/Living 26	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
WIR	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	1	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living 26	6	Downlight	200	Sealed
Kitchen/Living 26	1	Exhaust Fan	350	Sealed
WIR	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	0.00	0.50	Medium

Explanatory Notes

About this report

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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-2LASXT-01

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

Property

Address B0505, 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* 76.8	Open
Unconditioned* 3.9	NatHERS climate zone
Total 80.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

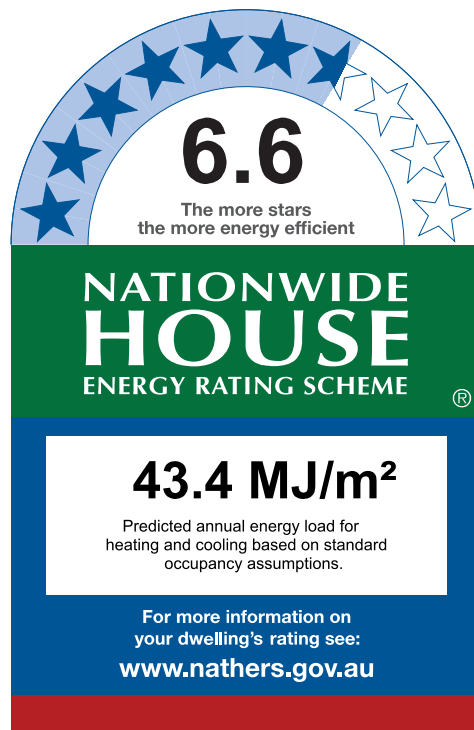
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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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	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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* 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?

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	1060	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01	2700	1755	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06	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
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	1587	W		No

* 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-A	2740	3048	W		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	1948	S		No
Entry	HEBEL-100-REFL-CAV1-A	2740	171	W		No
Entry	HEBEL-100-REFL-CAV1-A	2740	122	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E	2611	No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	321	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	100.3	2.00
INT-PB	Internal Plasterboard Stud Wall	56.2	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	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	4.5	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	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
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	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	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

* 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	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
Study	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
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
Study	1	Downlight	200	Sealed
Study	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	0.00	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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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.
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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
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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-79E6DM-01

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

Property

Address B0506, 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*	49.1 Open
Unconditioned*	5.6 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.

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
31.4	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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-79E6DM-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	W01	2700	2095	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	2455	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	1505	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	910	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	3006	W	3077	No
Entry	HEBEL-100-REFL-CAV1	2740	331	N		No
Entry	HEBEL-100-REFL-CAV1	2740	324	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3048	N	3067	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3641	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	S		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.4	2.00
INT-PB	Internal Plasterboard Stud Wall	27.3	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	13.0	N/A	0.00	Carpet
Entry	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	30.6	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	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
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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I1WFBR-01

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

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*	100.7	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	104.9	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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6.0
The more stars
the more energy efficient

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME

50.8 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
41.7	9.1
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-I1WFBR-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	W01	2700	1395	Sliding	45	W	None
Bedroom 02	ALM-003-01 A	W04	2700	2645	Sliding	45	W	None
Bedroom 03	ALM-003-01 A	W05	2700	995	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-003-01 A	W03	2700	3855	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W02	2700	1610	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-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
Bathroom	HEBEL-100-REFL-CAV1	2740	360	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3598	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	W	3904	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	3057	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2858	S	1308	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1100	W	5915	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1609	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W	1406	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	N	3361	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	106	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1651	S	5012	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	10	S		Yes
Pantry	HEBEL-100-REFL-CAV1	2740	297	E		Yes
Pantry	HEBEL-100-REFL-CAV1	2740	22	S		Yes
Pantry	HEBEL-100-REFL-CAV1	2740	296	S		Yes
Study	HEBEL-100-REFL-CAV1	2740	3006	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	131.6	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	4.2	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	0.96	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.96	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	N/A	0.96	Carpet

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	5.1	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.3	N/A	0.96	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.4	N/A	0.96	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.6	N/A	0.96	Carpet
Walkway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	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
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
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed
Walkway	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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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).
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-GN8YL2-01

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

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*	102.2	Suburban
Unconditioned*	3.7	NatHERS climate zone
Total	105.9	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

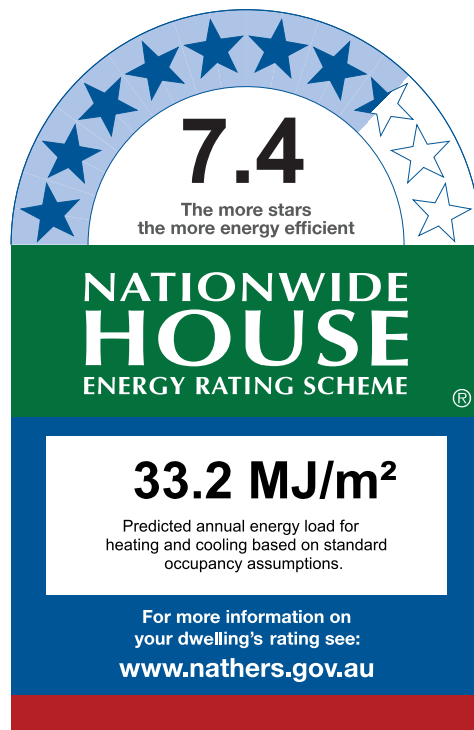
Declaration of interest No Conflict of Interest

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
21.6	11.5
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-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	W01	2700	1200	Sliding	45	E	None
Bedroom 02	ALM-003-01 A	W02	2700	2540	Sliding	45	E	None
Bedroom 03	ALM-003-01 A	W05	2700	2140	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-003-01 A	W04	2700	2835	Sliding	45	E	None
Kitchen/Living	ALM-003-01 A	W03	2700	2390	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-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	1588	E	6641	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3493	N	1350	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	E	3043	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3006	E	2641	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2641	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3027	N	5054	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	2.7	2.00
INT-PB	Internal Plasterboard Stud Wall	167.5	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	3.7	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.96	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	0.96	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.4	N/A	0.96	Carpet
Bedroom 03	CSOG-200: Concrete Slab on Ground (200mm)	4.6	N/A	0.96	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.96	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.7	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.0	N/A	0.96	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	6.2	N/A	0.96	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.96	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.96	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.96	Carpet

* 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 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
Entry	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Pantry	1	Downlight	100	Sealed
WIR	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.
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-A694YX-01

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

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*	58.5	Suburban
Unconditioned*	4.0	NatHERS climate zone
Total	62.5	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

42.5 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
23.8	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-A694YX-01>. 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-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	W01	2700	974	Sliding	45	E	None
Kitchen/living	ALM-003-01 A	W02	2700	2390	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	1715	E	6875	No
Entry	HEBEL-100-REFL-CAV1	2740	297	S		No

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	HEBEL-100-REFL-CAV1	2740	319	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	3594	E	2663	Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5249	S	6028	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4212	N	1722	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	106.6	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	4.0	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	N/A	0.96	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.8	N/A	0.96	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.96	Tile
Kitchen/living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	22.5	N/A	0.96	Tile
Kitchen/living	CSOG-200: Concrete Slab on Ground (200mm)	5.5	N/A	0.96	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.96	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

* Refer to glossary.



Ceiling penetrations*

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

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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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-G4GMOQ-01

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

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*	79.2 Suburban
Unconditioned*	5.2 NatHERS climate zone
Total	84.3 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

56.1 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
42.3	13.8
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-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.80	0.51	0.48	0.54
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-003-01 A	W04	2700	955	Sliding	45	W	None
Bedroom 02	ALM-004-01 A	W03	2700	2350	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-004-01 A	W01	2700	2940	Sliding	45	W	None
Kitchen/Living	ALM-004-01 A	W02	2700	3135	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.58	Medium (Windspray)	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-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.58	Medium (Windspray)	2.50	Yes
HEBEL-100-REFL-CAV1-C	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-B	2740	1440	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	3641	W	5710	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	1884	S		Yes
Hallway	HEBEL-100-REFL-CAV1-C	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4552	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	3966	W	2153	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	3548	S	3776	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	135.5	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	5.2	N/A	1.26	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.9	N/A	1.26	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	1.26	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	1.26	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	1.05	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	1.26	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.9	N/A	1.26	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.6	N/A	1.26	Carpet

* 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 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
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.

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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-XN8AB1-01

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

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*	72.8	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	76.6	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

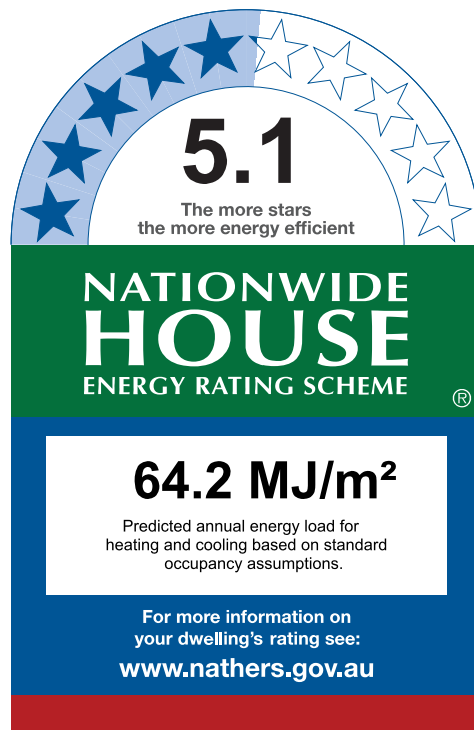
Declaration of interest No Conflict of Interest

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
35.5	28.6
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-XN8AB1-01>. 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 02	ALM-002-01 A	W04-g	2700	2645	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W05-c	2700	995	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-j	2700	3855	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	W02-I	2700	1610	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1950	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-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	122	S		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	238	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	2439	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2209	S	1299	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	125	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1310	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	N	3392	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2300	S	5012	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	61	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	324	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	338	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	12	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	13	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	109	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	90.2	2.00
INT-PB	Internal Plasterboard Stud Wall	6.1	2.50

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 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	13.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	48.2	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 02	2	Downlight	100	Sealed
Bedroom 03	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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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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* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-KEUKUL-01

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

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*	77.2	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	81.0	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

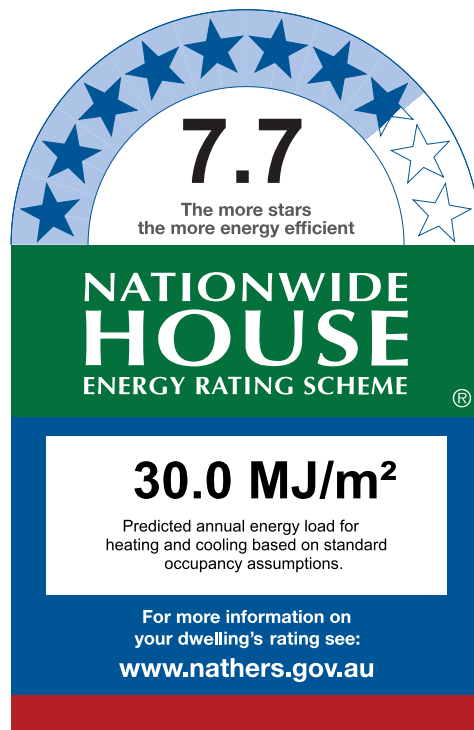
Declaration of interest No Conflict of Interest

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
4.0	26.0
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?

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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	2700	1060	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-c	2700	1755	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06-b	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
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	1587	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	W		No

* 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	1948	N		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	42	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2610	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1249	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	39.1	2.50
INT-PB	Internal Plasterboard Stud Wall	105.8	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	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	4.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.00	Tile
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	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Ensuite	1	Downlight	200	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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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.
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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
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-BXSEIA-01

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

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*	104.5	Suburban
Unconditioned*	3.7	NatHERS climate zone
Total	108.1	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.

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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
10.2	24.7
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-BXSEIA-01>. 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	W01-a	2700	1200	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-a	2700	2540	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05-a	2700	2140	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	W04-a	2700	2835	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-a	2700	2825	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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
Bathroom	HEBEL-100-REFL-CAV1-B	2740	35	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	84	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1588	E	6641	No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2977	N	1350	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3599	E	3559	No
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	3006	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	4001	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3543	N	5054	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	318	S		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	82	S		Yes

* Refer to glossary.



		(mm)	(mm)	ation	projection (mm)	feature
Study	HEBEL-100-REFL-CAV1-A	2740	21	E		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	2.7	2.00
INT-PB	Internal Plasterboard Stud Wall	154.3	2.00
INT-PB	Internal Plasterboard Stud Wall	6.6	2.50

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	11.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	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	5.7	N/A	0.00	Tile
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	38.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.8	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	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
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Pantry	1	Downlight	100	Sealed
Study	1	Downlight	200	Sealed
WIR	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-E5DP13-01

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

Property

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Lot/DP

NCC Class* 2

Type New

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Main Plan Project No. 221054

Prepared by Rothe Lowman

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Total	64.2	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

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Thermal Performance

Heating	Cooling
16.1	21.6
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-E5DP13-01>. 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	W01-g	2700	1963	Sliding	45	E	None
Kitchen/living	ALM-002-01 A	W02-g	2700	2390	Sliding	45	E	None
Kitchen/living	ALM-002-01 A	W04	2700	890	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	W03	2700	3495	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-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	2999	E	4210	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	317	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	297	S		No
Entry	HEBEL-100-REFL-CAV1	2740	319	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	3594	E		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5249	S	6028	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4212	N	3057	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	569	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	83.8	2.00
INT-PB	Internal Plasterboard Stud Wall	18.9	2.50

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	11.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	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	29.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	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	100	Sealed
Entry	1	Downlight	100	Sealed
Hallway	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			

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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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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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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.
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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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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-ELFIRG-01

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

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*	79.2 Suburban
Unconditioned*	5.2 NatHERS climate zone
Total	84.3 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

41.3 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
24.9	16.4
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?

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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.

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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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.80	0.51	0.48	0.54

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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-002-03 A	W04-e	2700	955	Sliding	45	W	None
Bedroom 02	ALM-003-01 A	W03-g	2700	2350	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-003-01 A	W01-i	2700	2940	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W02-i	2700	3135	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	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-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.50	Yes
INT-PB	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.50	No

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	1440	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	3641	W	5710	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	1884	S		Yes
Hallway	INT-PB	2740	106	S		Yes
Hallway	INT-PB	2740	113	S		Yes
Hallway	HEBEL-100-REFL-CAV1-B	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4552	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3966	W	2175	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	120	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	3548	S	3776	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	108.3	2.00
INT-PB	Internal Plasterboard Stud Wall	26.1	2.50

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	12.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.6	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	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
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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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-01

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

Property

Address C0301, 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* 72.8	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 76.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

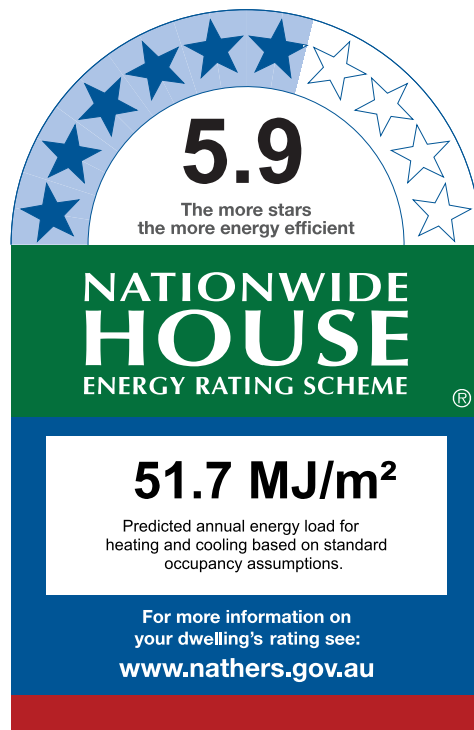
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
27.9	23.8
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-9FAPSS-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 02	ALM-002-01 A	W04-g	2700	2645	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W05-c	2700	995	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-j	2700	3855	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	W02-I	2700	1610	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1950	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-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	122	S		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	238	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	2443	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2209	S	1299	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	125	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1310	W	4795	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2300	S	5012	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	61	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	324	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	338	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	12	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	13	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	109	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	90.2	2.00
INT-PB	Internal Plasterboard Stud Wall	6.1	2.50

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 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	13.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	48.2	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 02	2	Downlight	100	Sealed
Bedroom 03	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

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-5YNXDO-01

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

Property

Address C0302, 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*	77.2	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	81.0	56 - Mascot AMO
Garage	0.0	



Accredited assessor

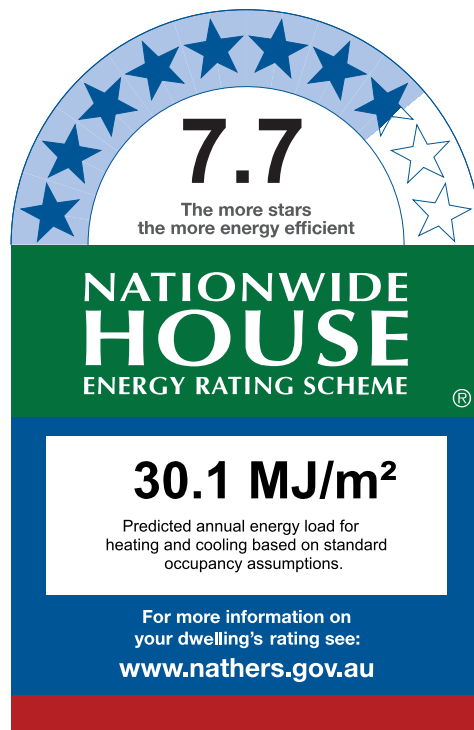
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
4.4	25.7
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-5YNXDO-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	W05-e	2700	1060	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-c	2700	1755	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06-b	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
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	1587	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	W		No

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	1948	N		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	42	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2610	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1249	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	39.1	2.50
INT-PB	Internal Plasterboard Stud Wall	105.8	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	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	4.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.00	Tile
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	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Ensuite	1	Downlight	200	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

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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 - 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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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-G8E6ZZ-01

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

Property

Address C0303, 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*	104.5	Suburban
Unconditioned*	3.7	NatHERS climate zone
Total	108.1	56 - Mascot AMO
Garage	0.0	



Accredited assessor

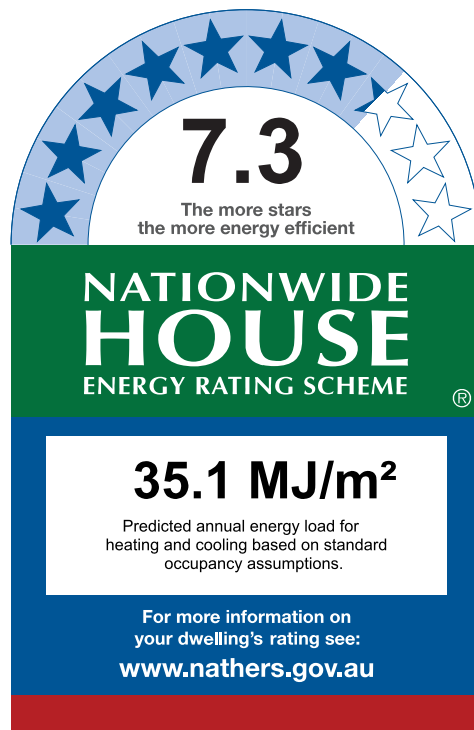
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
10.8	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-G8E6ZZ-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	W01-a	2700	1200	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-a	2700	2540	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05-a	2700	2140	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	W04-a	2700	2835	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-a	2700	2825	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	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-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
Bathroom	HEBEL-100-REFL-CAV1-B	2740	35	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	84	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	18	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	18	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1588	E	6641	No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2977	N	1350	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3599	E	3559	No
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	3006	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	4001	S		Yes

* Refer to glossary.

		(mm)	(mm)	ation	projection (mm)	feature
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3543	N	5054	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	318	S		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	82	S		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	21	E		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	2.7	2.00
INT-PB	Internal Plasterboard Stud Wall	154.1	2.00
INT-PB	Internal Plasterboard Stud Wall	6.6	2.50

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	11.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	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	5.7	N/A	0.00	Tile
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	38.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.8	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	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	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
Entry	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Pantry	1	Downlight	100	Sealed
Study	1	Downlight	200	Sealed
WIR	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).
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JPZXTR-01

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

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Lot/DP 13a/342819
NCC Class* 2
Type New

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Main Plan Project No. 221054
Prepared by Rothe Lowman

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Total	64.2	56 - Mascot AMO
Garage	0.0	



Accredited assessor

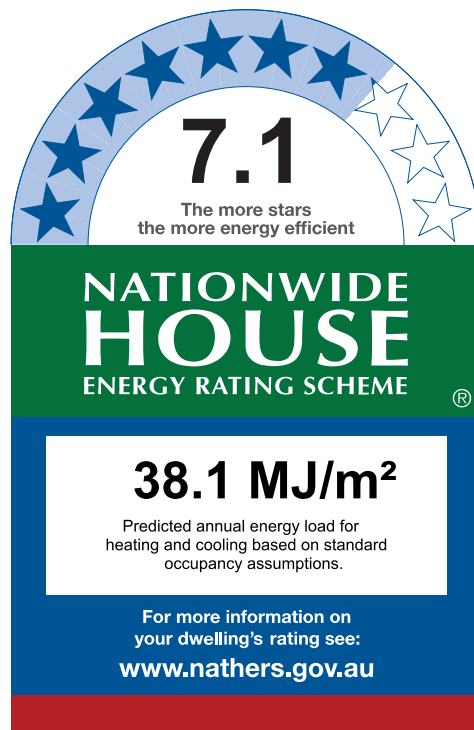
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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Thermal Performance

Heating	Cooling
16.9	21.2
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?

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-g	2700	1963	Sliding	45	E	None
Kitchen/living	ALM-002-01 A	W02-g	2700	2390	Sliding	45	E	None
Kitchen/living	ALM-002-01 A	W04	2700	890	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	W03	2700	3495	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-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	2999	E	4210	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	317	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	297	S		No
Entry	HEBEL-100-REFL-CAV1	2740	319	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	3594	E		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5249	S	6028	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4212	N	3057	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	569	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	83.8	2.00
INT-PB	Internal Plasterboard Stud Wall	18.9	2.50

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	11.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	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	29.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	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	100	Sealed
Entry	1	Downlight	100	Sealed
Hallway	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

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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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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-FZU6XY-01

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

Property

Address C0305, 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* 79.2	Suburban
Unconditioned* 5.2	NatHERS climate zone
Total 84.3	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

44.0 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
20.0	24.1
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-FZU6XY-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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.80	0.51	0.48	0.54

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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-002-03 A	W04-e	2700	955	Sliding	45	W	None
Bedroom 02	ALM-003-01 A	W03-g	2700	2350	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-003-01 A	W01-i	2700	2940	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W02-i	2700	3135	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.50	Yes
INT-PB	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.50	No

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	1440	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	3641	W	3516	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	1884	S		Yes
Hallway	INT-PB	2740	106	S		Yes
Hallway	INT-PB	2740	113	S		Yes
Hallway	HEBEL-100-REFL-CAV1-B	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4552	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3966	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	120	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	3548	S	3779	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	108.3	2.00
INT-PB	Internal Plasterboard Stud Wall	26.1	2.50

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	12.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.00	Tile

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Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.6	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	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
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-01

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

Property

Address C0401, 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*	72.8 Open
Unconditioned*	3.8 NatHERS climate zone
Total	76.6 56 - Mascot AMO
Garage	0.0



Accredited assessor

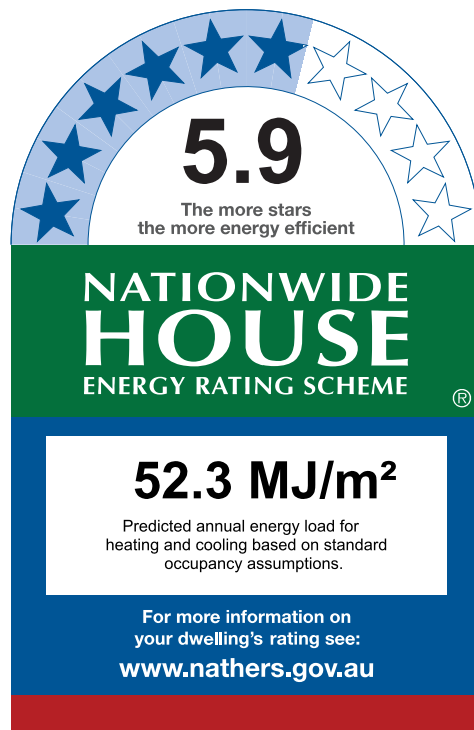
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
32.8	19.5
MJ/m ²	MJ/m ²

About the rating

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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 02	ALM-002-01 A	W04-g	2700	2645	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W05-c	2700	995	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-j	2700	3855	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	W02-I	2700	1610	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1950	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-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
Bathroom	HEBEL-100-REFL-CAV1	2740	122	S		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	238	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	2443	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2209	S	1299	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	125	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1310	W	4795	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2300	S	5012	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	61	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	324	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	338	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	12	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	13	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	109	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	90.2	2.00
INT-PB	Internal Plasterboard Stud Wall	6.1	2.50

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 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	13.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	48.2	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 02	2	Downlight	100	Sealed
Bedroom 03	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

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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-ZRPDYX-01

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

Property

Address C0402, 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* 77.2	Open
Unconditioned* 3.9	NatHERS climate zone
Total 81.0	56 - Mascot AMO
Garage 0.0	



Accredited assessor

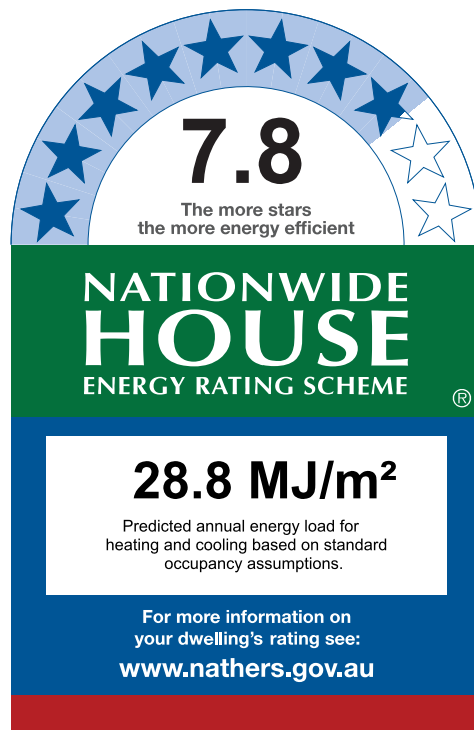
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
6.7	22.2
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-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	W05-e	2700	1060	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-c	2700	1755	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06-b	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
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	1587	W		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	W		No

* 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	1948	N		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	42	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2610	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1249	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	39.1	2.50
INT-PB	Internal Plasterboard Stud Wall	105.8	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.1	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	4.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.00	Tile
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	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Ensuite	1	Downlight	200	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			

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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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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-55WU18-01

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

Property

Address C0403, 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*	104.5 Open
Unconditioned*	3.7 NatHERS climate zone
Total	108.1 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.

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7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.3 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
13.9	19.3
MJ/m ²	MJ/m ²

About the rating

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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-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-a	2700	1200	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02-a	2700	2540	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05-a	2700	2140	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	W04-a	2700	2835	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-a	2700	2825	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	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-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
Bathroom	HEBEL-100-REFL-CAV1-B	2740	35	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	84	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	20	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	16	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	19	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	18	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	18	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1588	E	6641	No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2977	N	1350	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3599	E	3559	No
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	3006	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	4001	S		Yes

* Refer to glossary.



		(mm)	(mm)	ation	projection (mm)	feature
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3543	N	5054	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	318	S		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	82	S		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	21	E		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	2.7	2.00
INT-PB	Internal Plasterboard Stud Wall	154.1	2.00
INT-PB	Internal Plasterboard Stud Wall	6.6	2.50

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	11.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.7	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	5.7	N/A	0.00	Tile
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	38.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.8	N/A	0.00	Tile
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	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	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
Entry	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Pantry	1	Downlight	100	Sealed
Study	1	Downlight	200	Sealed
WIR	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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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-Z5I18Z-01

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

Property

Address C0404, 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*	58.6	Open
Unconditioned*	5.5	NatHERS climate zone
Total	64.2	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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37.2 MJ/m²
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21.5	15.7
MJ/m ²	MJ/m ²

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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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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-g	2700	1963	Sliding	45	E	None
Kitchen/living	ALM-002-01 A	W02-g	2700	2390	Sliding	45	E	None
Kitchen/living	ALM-002-01 A	W04	2700	890	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	W03	2700	3495	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-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	2999	E	4210	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	317	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	297	S		No
Entry	HEBEL-100-REFL-CAV1	2740	319	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	3594	E		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5249	S	6028	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4212	N	3057	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	569	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	83.8	2.00
INT-PB	Internal Plasterboard Stud Wall	18.9	2.50

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	11.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	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	29.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.0	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	100	Sealed
Entry	1	Downlight	100	Sealed
Hallway	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.

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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-KFNMWU-01

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

Property

Address C0405, 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*	79.2 Open
Unconditioned*	5.2 NatHERS climate zone
Total	84.3 56 - Mascot AMO
Garage	0.0



Accredited assessor

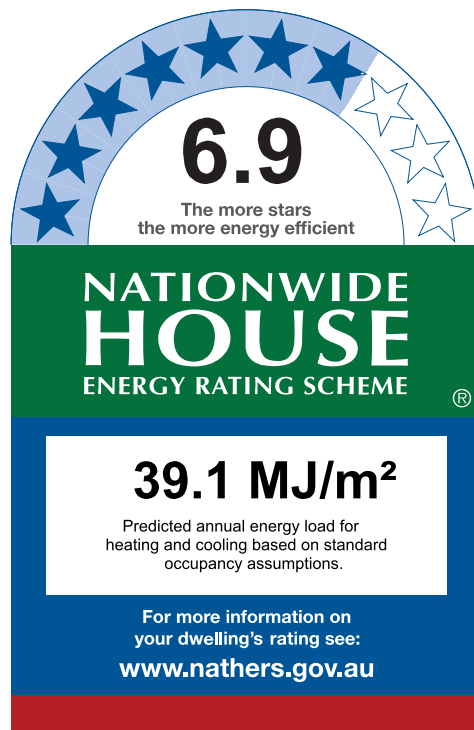
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
23.2	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-KFNMWU-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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.80	0.51	0.48	0.54

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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-002-03 A	W04-e	2700	955	Sliding	45	W	None
Bedroom 02	ALM-003-01 A	W03-g	2700	2350	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-003-01 A	W01-i	2700	2940	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W02-i	2700	3135	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	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-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.50	Yes
INT-PB	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.50	No

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	1440	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	3641	W	3516	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-B	2740	1884	S		Yes
Hallway	INT-PB	2740	106	S		Yes
Hallway	INT-PB	2740	113	S		Yes
Hallway	HEBEL-100-REFL-CAV1-B	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4552	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3966	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	120	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	3548	S	3779	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	108.3	2.00
INT-PB	Internal Plasterboard Stud Wall	26.1	2.50

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	12.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.6	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	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
Study	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.

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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Shading features	includes neighbouring buildings, fences, and wing walls, 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.
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-FADSRX-01

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

Property

Address C0501, 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*	72.8 Open
Unconditioned*	3.8 NatHERS climate zone
Total	76.6 56 - Mascot AMO
Garage	0.0



Accredited assessor

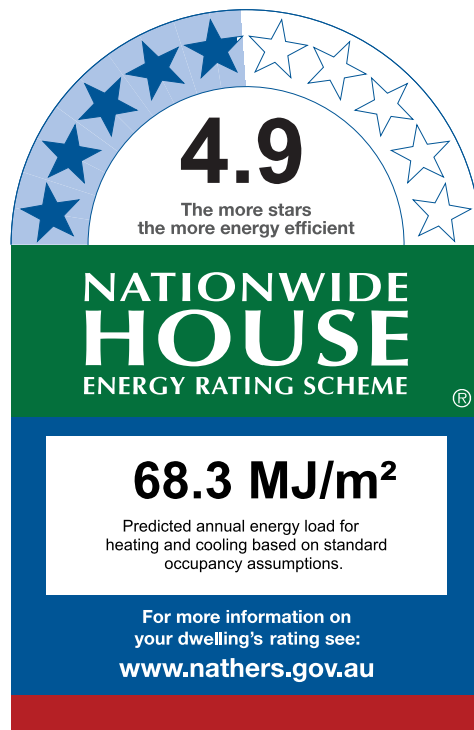
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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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Thermal Performance

Heating	Cooling
43.6	24.7
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 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	W04-g	2700	2645	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W05-c	2700	995	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W03-j	2700	3855	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	W02-I	2700	1610	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1950	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	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-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
Bathroom	HEBEL-100-REFL-CAV1-A	2740	122	S		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	238	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3620	W	2443	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2209	S	1299	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	125	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	1310	W	4795	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2498	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2300	S	5012	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	61	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	324	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	338	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	24	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	110	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.0	2.00
INT-PB	Internal Plasterboard Stud Wall	36.3	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	3.8	N/A	0.00	Tile

* Refer to glossary.

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	13.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	48.2	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	2.50	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Bedroom 03	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	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	0.00	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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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-KDXKR6-01

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

Property

Address C0502, 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*	73.3	Open
Unconditioned*	4.3	NatHERS climate zone
Total	77.6	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

47.0 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
21.7	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-KDXKR6-01>. 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	W05-e	2700	1060	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W01-c	2700	1755	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06-b	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
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
Bathroom	HEBEL-100-REFL-CAV1-B	2740	18	E		No

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1-B	2740	24	N		No
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1587	W		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3048	W		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	1948	N		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	42	S		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	203	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	94	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E	2962	No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	101.0	2.00
INT-PB	Internal Plasterboard Stud Wall	49.3	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	4.3	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	11.0	N/A	0.00	Tile
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	12.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.8	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

* 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	2.50	No
Ensuite	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

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 absorbance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

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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-EKQ3PL-01

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

Property

Address C0503, 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* 88.2	Open
Unconditioned* 4.2	NatHERS climate zone
Total 92.3	56 - Mascot AMO
Garage 0.0	



Accredited assessor

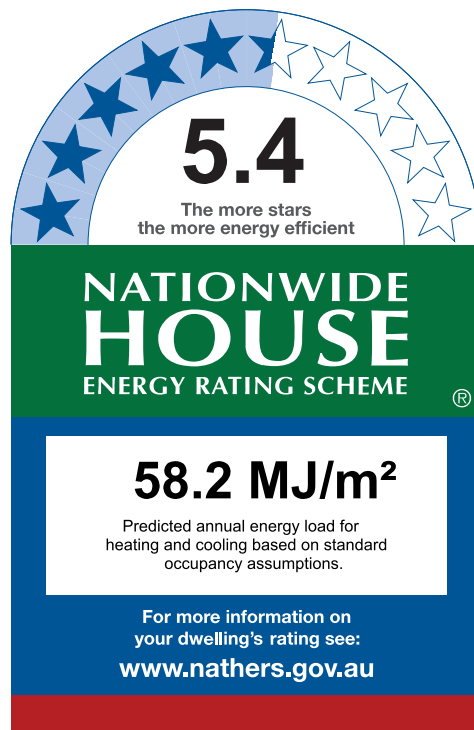
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
29.0	29.2
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-EKQ3PL-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?

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	1145	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W01	2700	2605	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W06	2700	2140	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	W02	2700	3450	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-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

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	296	W		No
Bathroom	HEBEL-100-REFL-CAV1-A	2740	296	N		No
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	N		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	14	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	1503	E	4382	No
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	977	N		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3599	E	4382	No
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	3006	E	3028	No
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	945	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	4001	E	3028	No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	321	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	292	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	1353	N	5059	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	75.6	2.00
INT-PB	Internal Plasterboard Stud Wall	66.5	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	16.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	0.00	Carpet

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	12.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.2	N/A	0.00	Tile
Hallway	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	38.6	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
Bedroom 03	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
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	6	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	0.00	0.50	Medium

Explanatory Notes

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

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

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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-G62ZS7-01

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

Property

Address C0504, 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	Open
Unconditioned* 3.8	NatHERS climate zone
Total 54.3	56 - Mascot AMO
Garage 0.0	



Accredited assessor

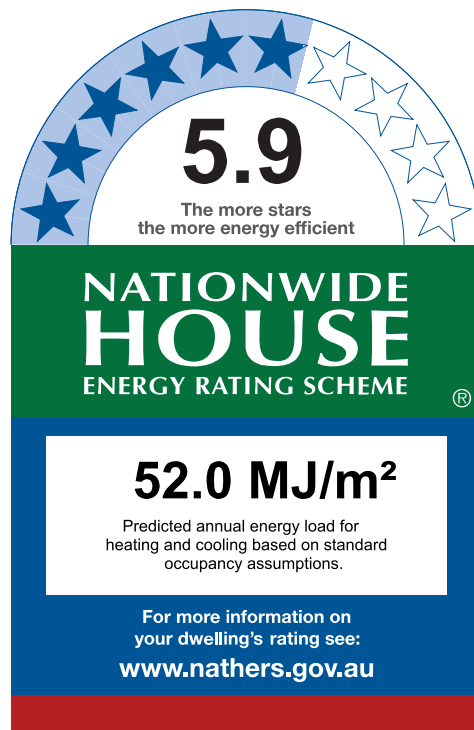
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
34.6	17.4
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".

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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	W01-g	2700	1963	Sliding	45	E	None
Kitchen/living	ALM-002-01 A	W02-g	2700	2390	Sliding	45	E	None
Kitchen/living	ALM-002-01 A	W04	2700	890	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	0.32	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	2999	E	3974	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	HEBEL-100-REFL-CAV1-A	2740	317	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	47	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	13	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	12	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	297	S		No
Entry	HEBEL-100-REFL-CAV1-A	2740	319	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1-A	2740	3594	E	3015	Yes
Kitchen/living	HEBEL-100-REFL-CAV1-A	2740	2217	S	6030	No
Kitchen/living	HEBEL-100-REFL-CAV1-A	2740	569	S		Yes
Kitchen/living	HEBEL-100-REFL-CAV1-A	2740	957	N	3091	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.6	2.00
INT-PB	Internal Plasterboard Stud Wall	34.1	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	3.8	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	6.5	N/A	0.00	Tile
Kitchen/living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	30.3	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	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	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
Laundry	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
Bedroom 01	2	Downlight	100	Sealed
Entry	1	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	0.00	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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-997BLZ-01

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

Property

Address C0505, 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*	79.2 Open
Unconditioned*	5.2 NatHERS climate zone
Total	84.3 56 - Mascot AMO
Garage	0.0



Accredited assessor

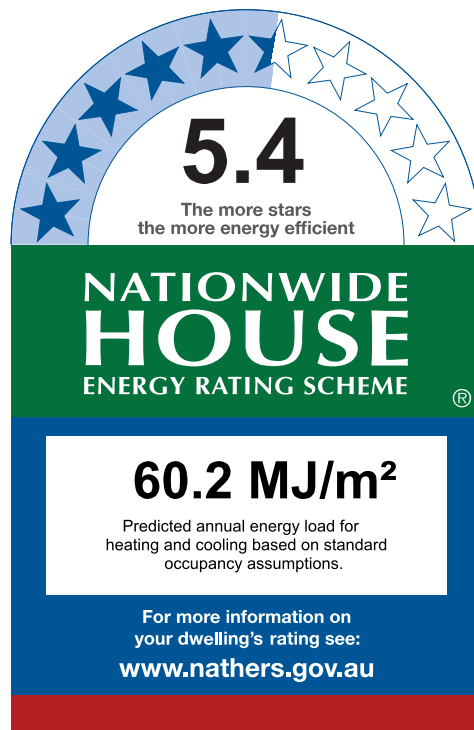
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
37.9	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-997BLZ-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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.80	0.51	0.48	0.54

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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-002-03 A	W04-e	2700	955	Sliding	45	W	None
Bedroom 02	ALM-003-01 A	W03-g	2700	2350	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-003-01 A	W01-i	2700	2940	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W02-i	2700	3135	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-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	1440	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3641	W	3538	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1884	S		Yes
Hallway	HEBEL-100-REFL-CAV1	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4552	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3966	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	120	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3548	S	3801	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	69.8	2.00
INT-PB	Internal Plasterboard Stud Wall	64.9	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	5.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.6	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
Entry	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
Study	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	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
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	0.00	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.
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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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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-NHY4UQ-01

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

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*	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.

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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

43.0 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
31.1	11.9
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?

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	995	Sliding	45	W	None
Bedroom 02	ALM-003-01 A	W03	2700	890	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W01	2700	3245	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	1445	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2604	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-100-REFL-CAV1	2740	3006	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	4228	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	995	S		Yes
Study	HEBEL-100-REFL-CAV1	2740	402	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	157.2	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	4.1	N/A	1.05	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	1.05	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	1.05	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.9	N/A	1.05	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	1.05	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	1.05	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.2	N/A	1.05	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	1.05	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
Entry	1	Downlight	100	Sealed
Hallway	1	Downlight	100	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

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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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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-WWP2XK-01

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

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*	78.6	Suburban
Unconditioned*	4.8	NatHERS climate zone
Total	83.4	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

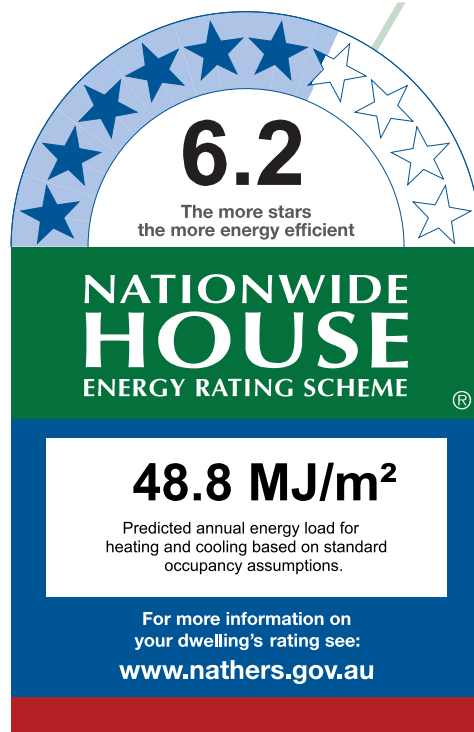
Declaration of interest No Conflict of Interest

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
29.5	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-WWP2XK-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	W04	2700	2095	Sliding	45	E	None
Bedroom 02	ALM-003-01 A	W01	2700	1035	Sliding	45	E	None
Kitchen/Living	ALM-003-01 A	W03	2700	1755	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-003-01 A	W02	2700	2665	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

* Refer to glossary.

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	1608	S	4177	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	E	2408	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3408	S	4177	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1545	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1587	S	4177	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2392	S	12198	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3937	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6244	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	2689	S	4177	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	106.9	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	4.8	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.2	N/A	0.96	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.96	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.96	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.3	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.6	N/A	1.05	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	6.1	N/A	0.96	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	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
Bedroom 01	1	Downlight	100	Sealed
Bedroom 02	2	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
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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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.
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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I5HFVI-01

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

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*	3.8	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

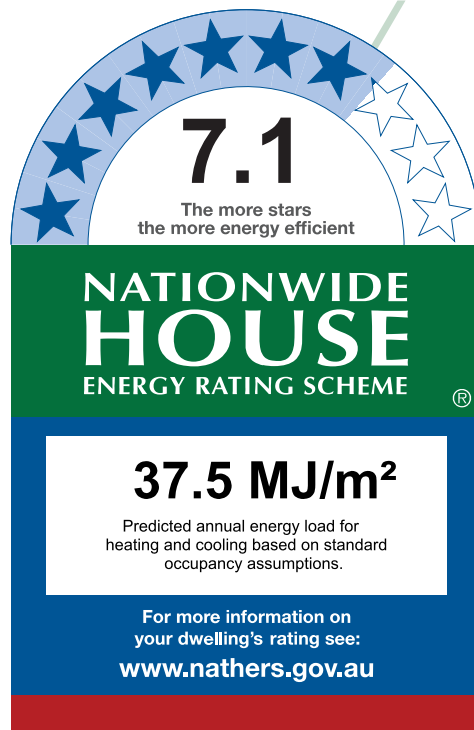
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
23.5	14.0
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-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	W01	2700	1610	Sliding	45	N	None
Bedroom 02	ALM-003-01 A	W04	2700	2055	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W03	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-003-01 A	W02	2700	1460	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-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	1830	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2200	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S	4177	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2392	S	4177	Yes
Entry	HEBEL-100-REFL-CAV1	2740	3493	S	4177	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4987	N	3213	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2051	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5038	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2168	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	70.5	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	3.8	N/A	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	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	3.8	N/A	0.96	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.96	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.4	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
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	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
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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-4FFLR6-01

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

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*	45.5	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	49.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

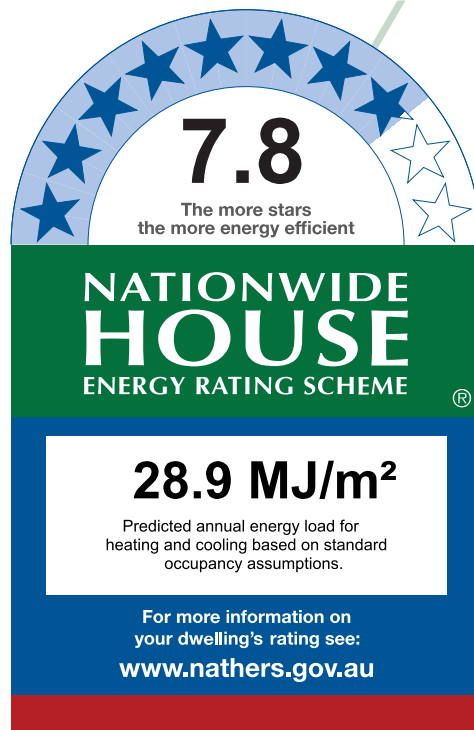
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
7.7	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-4FFLR6-01>. 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	W06	2700	1440	Sliding	45	W	None
Kitchen/Living	ALM-003-01 A	W05	2700	2750	Sliding	66	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	3599	W	3984	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3980	N		No

* 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	6414	S	4177	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	74.4	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	0.96	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.96	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.96	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.8	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
Bedroom 01	2	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	4	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
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.
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-ZD7BB1-01

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

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*	96.6	Suburban
Unconditioned*	4.1	NatHERS climate zone
Total	100.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

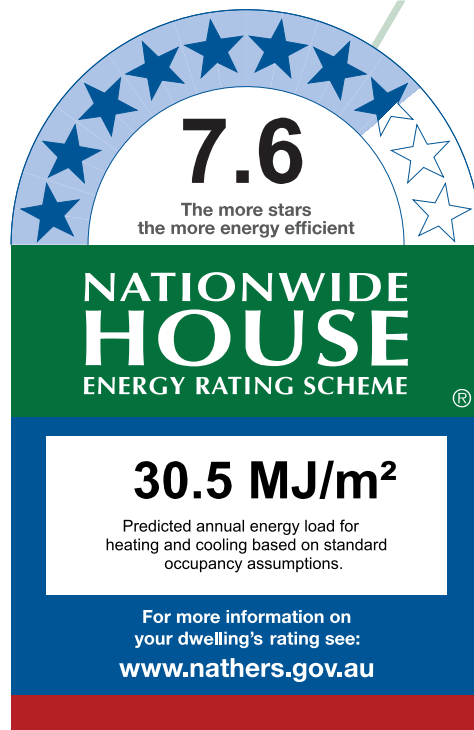
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
10.8	19.8
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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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-h	2700	1035	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W03-k	2700	890	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02-m	2700	995	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	W01-m	2700	3245	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

* 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	1453	E	3293	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	314	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	307	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2604	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1445	W		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	74	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	73	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4097	E	3263	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	6.2	2.00
INT-PB	Internal Plasterboard Stud Wall	32.1	2.50
INT-PB	Internal Plasterboard Stud Wall	141.8	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	4.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Carpet
Entry	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	8.7	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
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	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
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.

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-IKTTRQ-01

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

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*	59.5	Suburban
Unconditioned*	5.6	NatHERS climate zone
Total	65.1	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.

6.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

41.0 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	24.9
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-IKTTRQ-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	W04-d	2700	2095	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-f	2700	1755	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W02-h	2700	2665	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	3080	Yes
Entry	HEBEL-100-REFL-CAV1	2740	445	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	HEBEL-100-REFL-CAV1	2740	312	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2392	S	13713	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3937	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5804	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	673	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	95.0	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	5.6	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
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	29.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	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
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	1	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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-Q2E5Z1-01

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

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* 100.3	Suburban
Unconditioned* 4.2	NatHERS climate zone
Total 104.5	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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

33.6 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
16.8	16.9
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-Q2E5Z1-01>. 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	W05	2700	1460	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W06	2700	1505	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W07	2700	1990	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	W10	2700	1440	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W09	2700	2140	Sliding	45	S	None
Study	ALM-002-01 A	W08	2700	685	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	E		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3027	E	2655	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	21	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3959	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2689	S	6268	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	211	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	106	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3067	N		No
Study	HEBEL-100-REFL-CAV1	2740	2942	E	2703	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	149.8	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	4.2	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 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	11.4	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	5.1	N/A	0.00	Tile
Entry	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	34.2	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile
Walkway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	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	1	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
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed
Study	1	Downlight	200	Sealed
WIR	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Walkway	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.
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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).

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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-PU49WI-01

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

Property

Address D0204, 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* 44.3	Suburban
Unconditioned* 5.1	NatHERS climate zone
Total 49.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

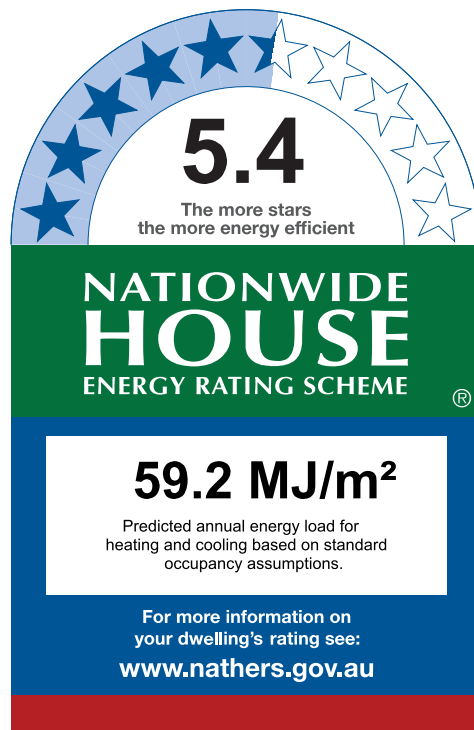
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
35.1	24.2
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-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?

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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	1950	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04	2700	1588	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W02	2700	2140	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	2700	845	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	3006	S	3022	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1800	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3028	W	3048	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	678	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1990	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	75.5	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	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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
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).
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-814D3D-01

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

Property

Address D0205, 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* 44.3	Suburban
Unconditioned* 5.1	NatHERS climate zone
Total 49.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

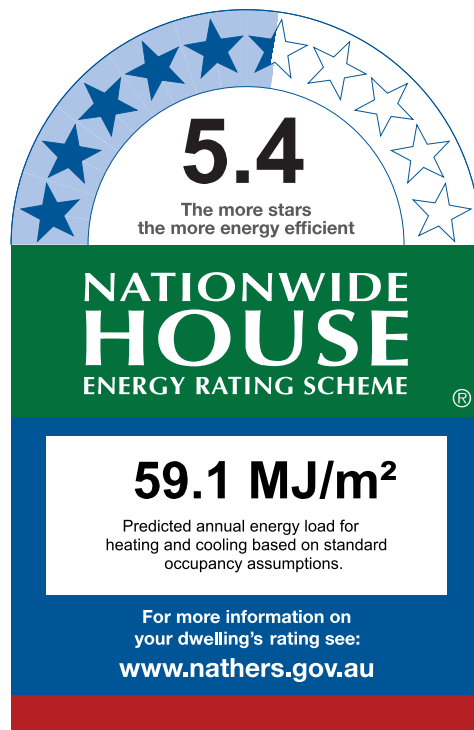
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
33.9	25.2
MJ/m ²	MJ/m ²

About the rating

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Verification

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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-e	2700	1950	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W02-e	2700	2140	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-e	2700	845	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	W04-b	2700	1588	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	S	3022	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3028	E	3049	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3789	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	77.6	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	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	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			

* 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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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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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.
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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.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-3FGRYG-01

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

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*	69.5	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	73.3	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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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
37.7	16.4
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?

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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.

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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	1440	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W04	2700	2500	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06	2700	4235	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*
Kitchen/Living	ALM-002-01 A	W05	2700	910	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-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	3408	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2223	W	5732	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5610	S	2207	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4954	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	90.6	2.00
INT-PB	Internal Plasterboard Stud Wall	5.4	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	14.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	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	4.7	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

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

* Refer to glossary.



Ceiling penetrations*

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

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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-2IURMM-01

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

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*	3.8	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.

6.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

40.3 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
20.2	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-2IURMM-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	W01-d	2700	1610	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W04-c	2700	2055	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05	2700	870	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-d	2700	3978	Sliding	66	N	None
Kitchen/Living	ALM-002-01 A	W02-d	2700	1460	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-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	1830	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2200	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2051	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5038	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4989	N	3213	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2166	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	94.0	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	14.0	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	3.8	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	2.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.4	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	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
Entry	1	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
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.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-WMC4UR-01

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

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*	45.5	Suburban
Unconditioned*	4.3	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

29.6 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
2.7	26.8
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	W06-a	2700	1440	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05-d	2700	2750	Sliding	66	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	3599	W	3984	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3980	N		No

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	92.0	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	11.9	N/A	0.00	Carpet
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	28.8	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
Hallway	1	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
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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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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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.
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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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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-QQN25S-01

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

Property

Address D0301, 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* 96.6	Suburban
Unconditioned* 4.1	NatHERS climate zone
Total 100.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

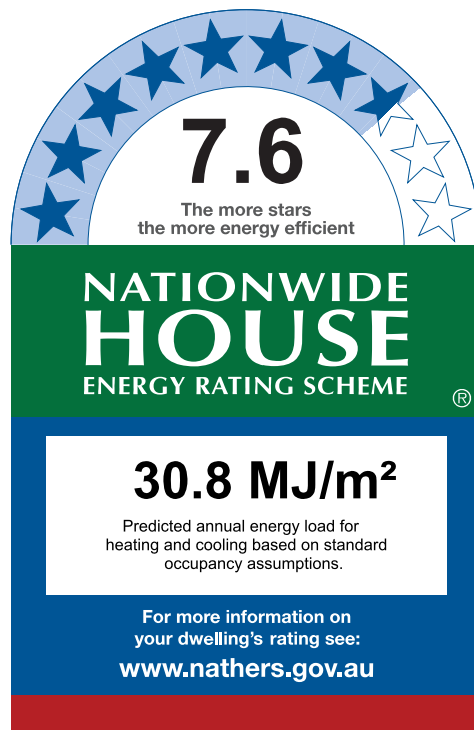
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
11.2	19.6
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-QQN25S-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	W01-h	2700	1035	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W03-k	2700	890	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02-m	2700	995	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	W01-m	2700	3245	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1453	E	3293	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	314	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	307	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2604	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1445	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4097	E	3263	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	6.2	2.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	5.3	0.00
INT-PB	Internal Plasterboard Stud Wall	32.1	2.50
INT-PB	Internal Plasterboard Stud Wall	136.5	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	4.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Carpet
Entry	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	8.7	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
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	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.

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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-HISO1L-01

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

Property

Address D0302, 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* 59.5	Suburban
Unconditioned* 5.6	NatHERS climate zone
Total 65.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

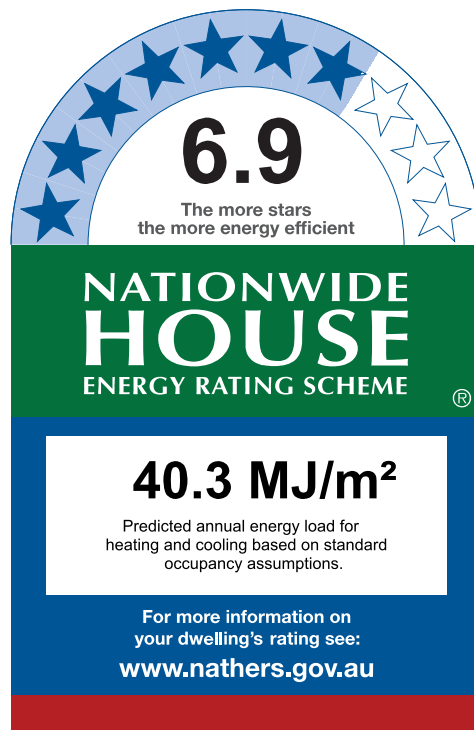
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
16.7	23.5
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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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-d	2700	2095	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-f	2700	1755	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W02-h	2700	2665	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	3080	Yes
Entry	HEBEL-100-REFL-CAV1	2740	445	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	HEBEL-100-REFL-CAV1	2740	312	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2392	S	13713	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3937	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5804	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	673	S		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	16.4	0.00
INT-PB	Internal Plasterboard Stud Wall	78.6	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	5.6	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
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	29.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	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
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

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

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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-N70MH7-01

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

Property

Address D0303, 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* 100.3	Suburban
Unconditioned* 4.2	NatHERS climate zone
Total 104.5	56 - Mascot AMO
Garage 0.0	



Accredited assessor

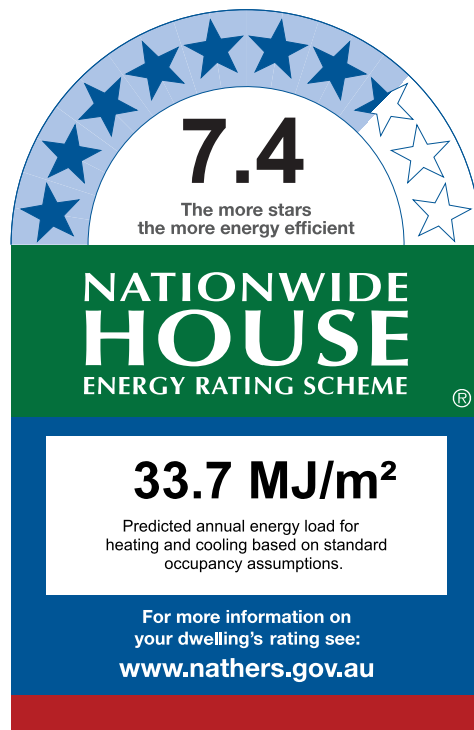
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
17.3	16.4
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-N70MH7-01>. 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	W05	2700	1460	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W06	2700	1505	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W07	2700	1990	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	W10	2700	1440	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W09	2700	2140	Sliding	45	S	None
Study	ALM-002-01 A	W08	2700	685	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	E		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3027	E	2655	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	21	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3959	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2689	S	6268	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	211	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	106	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3067	N		No
Study	HEBEL-100-REFL-CAV1	2740	2942	E	2703	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	11.1	0.00
INT-PB	Internal Plasterboard Stud Wall	138.7	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	10.0	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

* 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	11.4	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	6.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.2	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile
Walkway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	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	1	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
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
WIR	1	Downlight	200	Sealed
Walkway	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) 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.
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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).
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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-PB47VV-01

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

Property

Address D0304, 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* 47.8	Suburban
Unconditioned* 5.1	NatHERS climate zone
Total 52.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

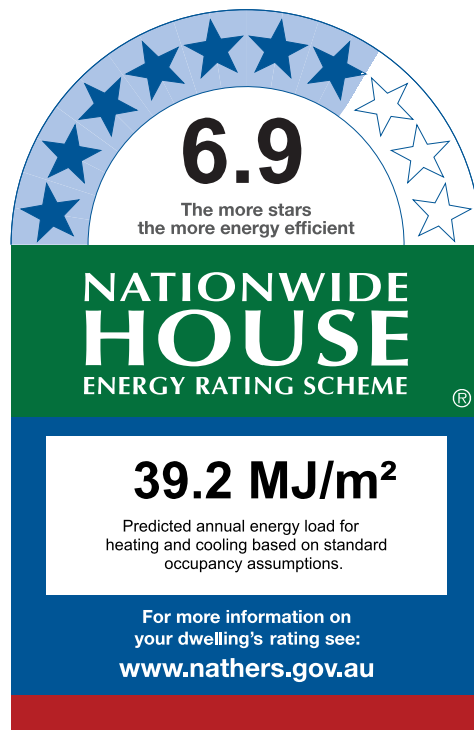
Name Duncan Hope
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Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
21.2	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

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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	W01	2700	1950	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W02	2700	937	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*
Kitchen/Living	ALM-002-01 A	W03	2700	845	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04	2700	1588	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-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	3006	S	3122	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1876	W	3024	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	678	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3790	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	70.2	2.00
INT-PB	Internal Plasterboard Stud Wall	11.6	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	14.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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
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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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-87HD5G-01

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

Property

Address D0305, 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* 47.8	Suburban
Unconditioned* 5.1	NatHERS climate zone
Total 52.9	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.

6.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

41.0 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
20.6	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-87HD5G-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 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-e	2700	1950	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03-e	2700	845	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	W04-b	2700	1588	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W02-e	2700	913	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-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	3006	S	3061	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	18	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3789	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1864	E	3049	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	72.3	2.00
INT-PB	Internal Plasterboard Stud Wall	11.6	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	14.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-SR84JU-01

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

Property

Address D0306, 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* 74.8	Suburban
Unconditioned* 4.5	NatHERS climate zone
Total 79.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

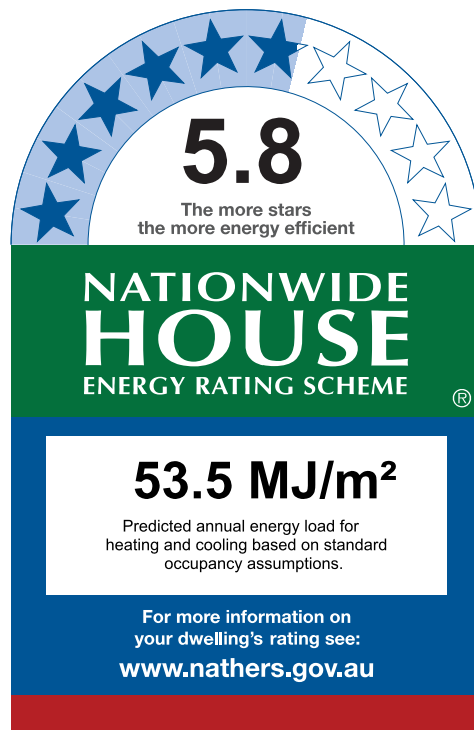
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
37.3	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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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	1440	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W04	2700	2500	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06	2700	4235	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*
Kitchen/Living	ALM-002-01 A	W05	2700	910	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-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

* 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	3408	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1122	W	5698	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3599	W		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	350	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5610	S	2345	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	6055	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	106.6	2.00
INT-PB	Internal Plasterboard Stud Wall	7.7	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
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	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	4.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.6	N/A	0.00	Tile
Pantry	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*
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
Entry	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			

* 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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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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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-98Y5V8-01

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

Property

Address D0307, 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* 68.8	Suburban
Unconditioned* 3.8	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.

6.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

40.3 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
20.3	20.0
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-98Y5V8-01>. 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	W01-d	2700	1610	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W04-c	2700	2055	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05	2700	870	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-d	2700	3978	Sliding	66	N	None
Kitchen/Living	ALM-002-01 A	W02-d	2700	1460	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-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	1830	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2200	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	318	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2051	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5038	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4989	N	3213	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2166	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	93.1	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	3.8	N/A	0.00	Tile
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	10.8	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	6.4	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	31.4	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	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
Entry	1	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
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.
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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-NLKPPH-01

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

Property

Address D0308, 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*	45.5	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	49.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

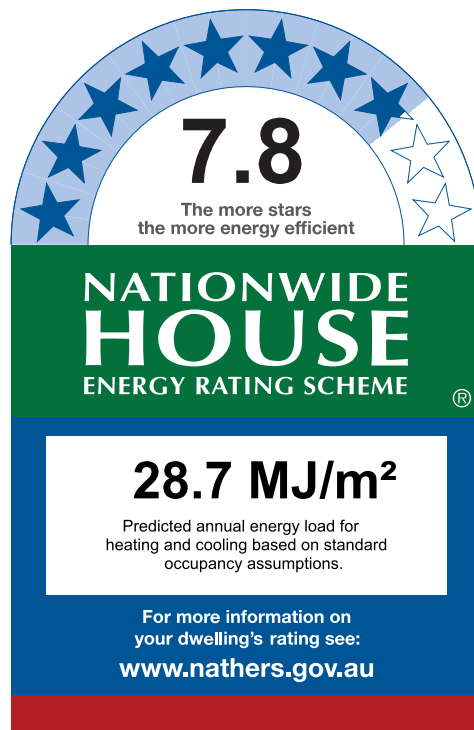
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
2.8	25.9
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-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-a	2700	1440	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05-d	2700	2750	Sliding	66	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	3599	W	3984	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3980	N		No

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	92.0	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	11.9	N/A	0.00	Carpet
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	28.8	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
Hallway	1	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
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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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.
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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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-NZHOOC-01

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

Property

Address D0401, 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* 96.6	Open
Unconditioned* 4.1	NatHERS climate zone
Total 100.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

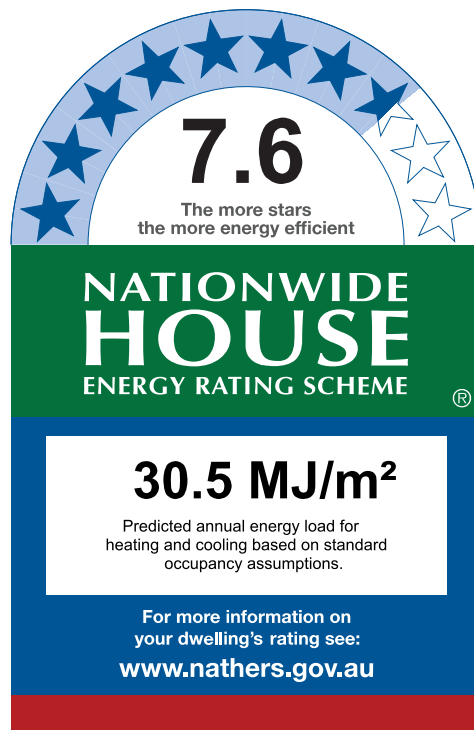
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
13.9	16.5
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-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	W01-h	2700	1035	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W03-k	2700	890	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02-m	2700	995	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	W01-m	2700	3245	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1453	E	3293	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	314	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	307	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2604	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1445	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4097	E	3263	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	6.2	2.00
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	5.3	0.00
INT-PB	Internal Plasterboard Stud Wall	32.1	2.50
INT-PB	Internal Plasterboard Stud Wall	136.5	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	4.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Carpet
Entry	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	8.7	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
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-BYWIHK-01

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

Property

Address D0402, 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* 59.5	Open
Unconditioned* 5.6	NatHERS climate zone
Total 65.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

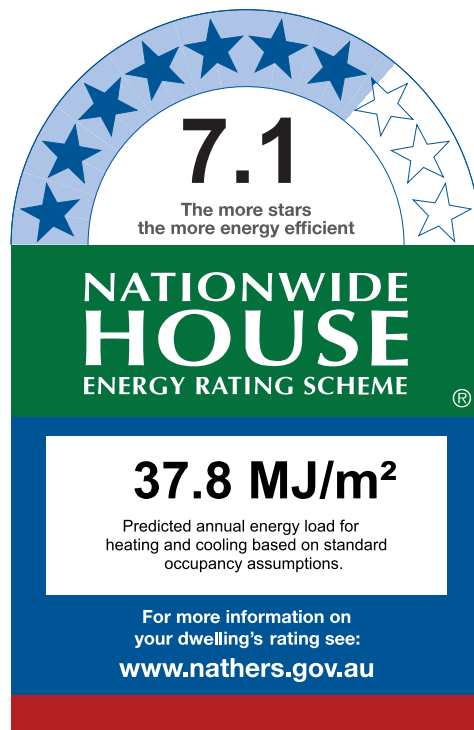
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
20.7	17.1
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.

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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.

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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	W04-d	2700	2095	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-f	2700	1755	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W02-h	2700	2665	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	3080	Yes
Entry	HEBEL-100-REFL-CAV1	2740	445	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	HEBEL-100-REFL-CAV1	2740	312	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2392	S	13713	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3937	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5804	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	673	S		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	16.4	0.00
INT-PB	Internal Plasterboard Stud Wall	78.6	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	5.6	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
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	29.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	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
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	1	Downlight	100	Sealed

* Refer to glossary.



Ceiling penetrations*

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

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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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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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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-W9BS1Y-01

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

Property

Address D0403, 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* 100.3	Open
Unconditioned* 4.2	NatHERS climate zone
Total 104.5	56 - Mascot AMO
Garage 0.0	



Accredited assessor

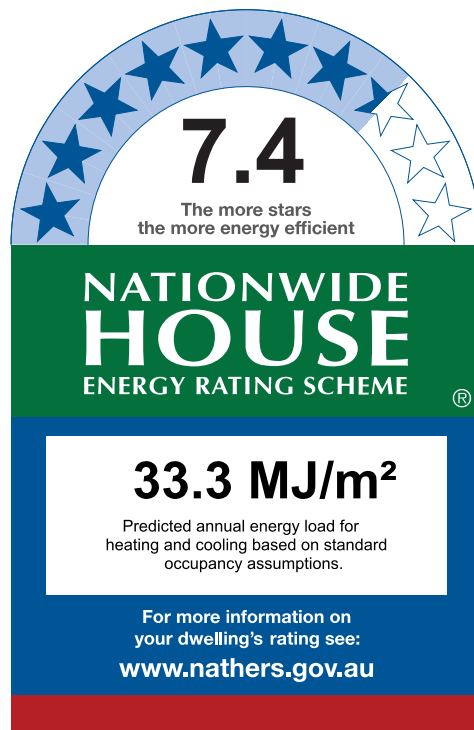
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
20.7	12.7
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-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	W05	2700	1460	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W06	2700	1505	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W07	2700	1990	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	W10	2700	1440	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W09	2700	2140	Sliding	45	S	None
Study	ALM-002-01 A	W08	2700	685	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	21	E		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3027	E	2655	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	21	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3959	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2689	S	6268	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	211	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	106	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3067	N		No
Study	HEBEL-100-REFL-CAV1	2740	2942	E	2703	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	11.1	0.00
INT-PB	Internal Plasterboard Stud Wall	138.7	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	10.0	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

* 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	11.4	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	6.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.2	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.3	N/A	0.00	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile
Walkway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	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	1	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
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	200	Sealed
Study	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
WIR	1	Downlight	200	Sealed
Walkway	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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-HY90I5-01

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

Property

Address D0404, 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* 47.8	Open
Unconditioned* 5.1	NatHERS climate zone
Total 52.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

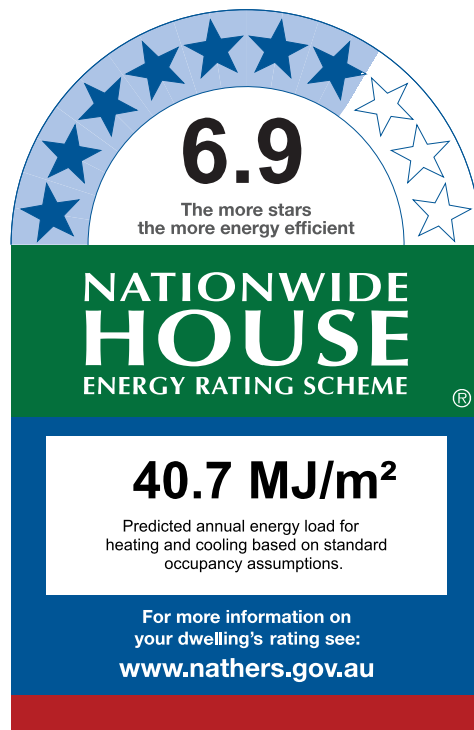
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
25.7	15.0
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-HY90I5-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.



Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 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	1950	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W02	2700	937	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*
Kitchen/Living	ALM-002-01 A	W03	2700	845	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04	2700	1588	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-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	3006	S	3122	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1876	W	3024	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	678	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3790	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	70.2	2.00
INT-PB	Internal Plasterboard Stud Wall	11.6	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	14.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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
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

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).

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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-5OMDDY-01

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

Property

Address D0405, 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* 47.8	Open
Unconditioned* 5.1	NatHERS climate zone
Total 52.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

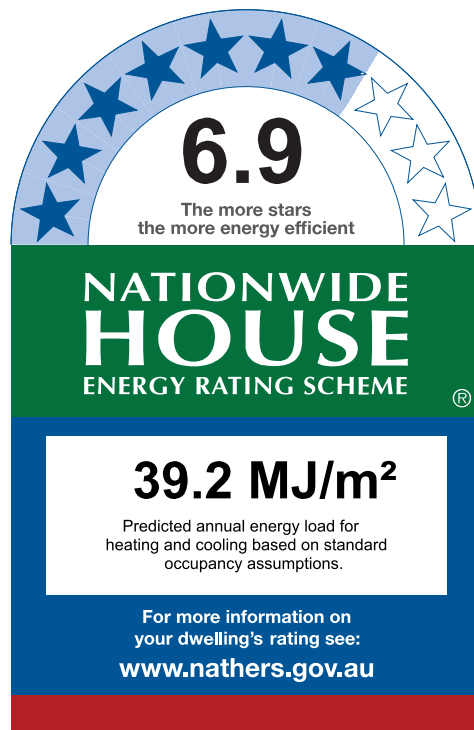
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
24.9	14.3
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.

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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-e	2700	1950	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03-e	2700	845	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	W04-b	2700	1588	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W02-e	2700	913	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-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	3006	S	3061	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	18	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3789	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1864	E	3049	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	72.3	2.00
INT-PB	Internal Plasterboard Stud Wall	11.6	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	14.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	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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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-66RHDE-01

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

Property

Address D0406, 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* 74.8	Open
Unconditioned* 4.5	NatHERS climate zone
Total 79.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

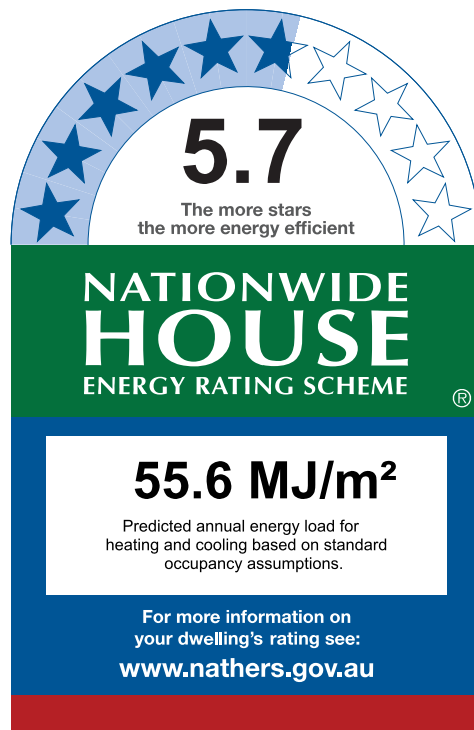
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
42.4	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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-66RHDE-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	1440	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W04	2700	2500	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06	2700	4235	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*
Kitchen/Living	ALM-002-01 A	W05	2700	910	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-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

* 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	3408	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1122	W	5698	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3599	W		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	350	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5610	S	2345	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	6055	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	106.6	2.00
INT-PB	Internal Plasterboard Stud Wall	7.7	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
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	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	4.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.6	N/A	0.00	Tile
Pantry	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*
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
Entry	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			

* 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) 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-18XPEZ-01

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

Property

Address D0407, 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*	68.8	Open
Unconditioned*	3.8	NatHERS climate zone
Total	72.7	56 - Mascot AMO
Garage	0.0	



Accredited assessor

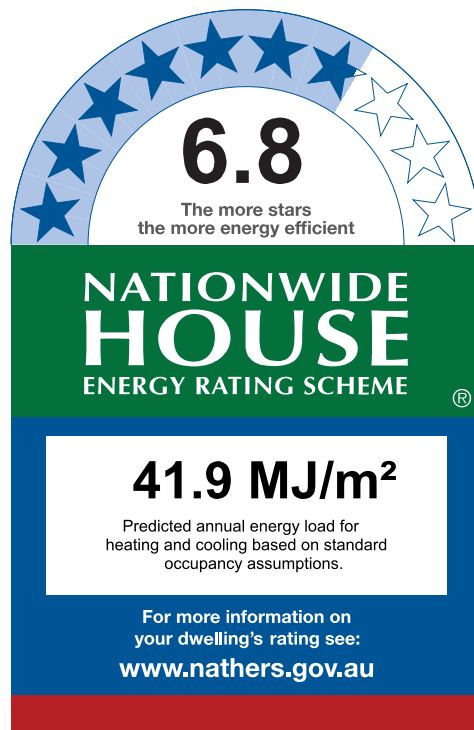
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
24.7	17.3
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	W01-d	2700	1610	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W04-c	2700	2055	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05	2700	870	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-d	2700	3978	Sliding	66	N	None
Kitchen/Living	ALM-002-01 A	W02-d	2700	1460	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-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	1830	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2200	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	318	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2051	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5038	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4989	N	3213	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2166	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	93.1	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	3.8	N/A	0.00	Tile
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	10.8	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	6.4	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	31.4	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	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
Entry	1	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
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).

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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-48YZKJ-01

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

Property

Address D0408, 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* 45.5	Open
Unconditioned* 4.3	NatHERS climate zone
Total 49.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

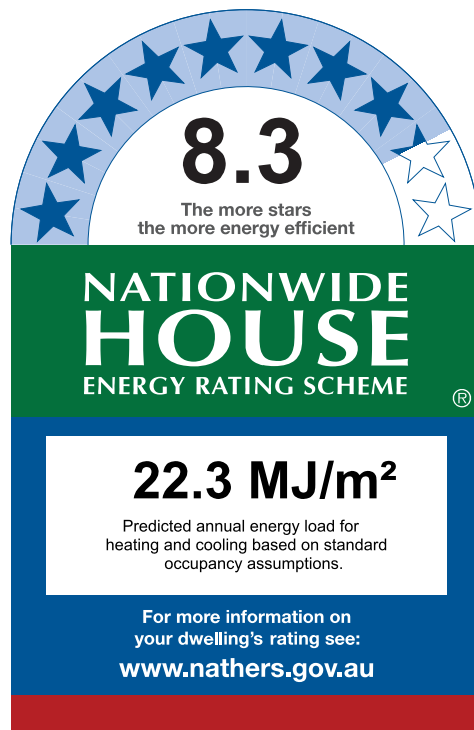
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
3.7	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

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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	W06-a	2700	1440	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05-d	2700	2750	Sliding	66	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	3599	W	3984	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3980	N		No

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	92.0	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	11.9	N/A	0.00	Carpet
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	28.8	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
Hallway	1	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 absorbptance	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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JBVEMG-01

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

Property

Address D0501, 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* 96.6	Open
Unconditioned* 4.1	NatHERS climate zone
Total 100.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

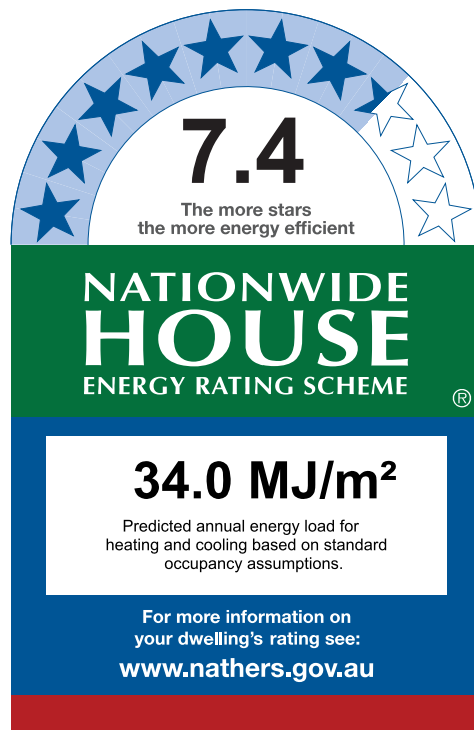
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
18.8	15.2
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?

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-h	2700	1035	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W03-k	2700	890	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W02-m	2700	995	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	W01-m	2700	3245	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-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

* 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	1453	E	3311	No
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	314	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	307	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	19	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	2604	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3006	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1-A	2740	1445	W		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	318	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4097	E	3450	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	93.7	2.00
INT-PB	Internal Plasterboard Stud Wall	86.6	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	16.5	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Carpet
Entry	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	8.7	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
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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	2.50	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Pantry	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	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	200	Sealed
Entry	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	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	0.00	0.50	Medium

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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-6FHNS8-01

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

Property

Address D0502, 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* 46.6	Open
Unconditioned* 5.6	NatHERS climate zone
Total 52.3	56 - Mascot AMO
Garage 0.0	



Accredited assessor

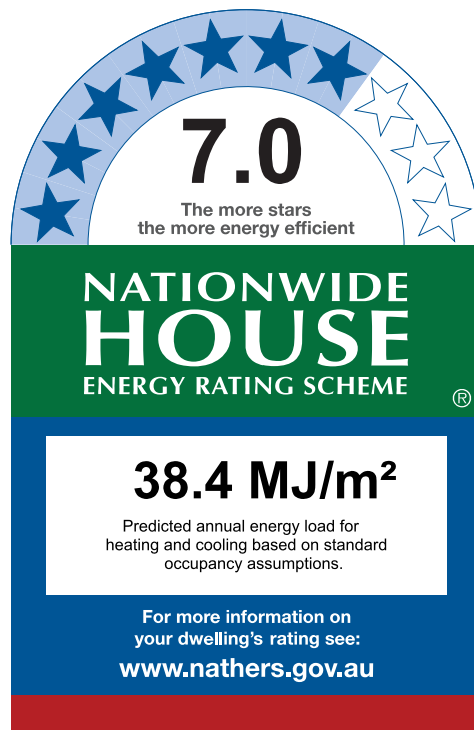
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
14.0	24.4
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-6FHNS8-01>. 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	W01	2700	2030	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02	2700	2860	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	0.50	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	2740	3112	E	3657	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2188	N		No

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	HEBEL-100-REFL-CAV1	2740	83	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	22	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	150	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3874	E	3001	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	275	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	265	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	656	N	2983	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	322	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.9	2.00
INT-PB	Internal Plasterboard Stud Wall	23.2	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	5.6	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
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.0	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

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	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

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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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.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-HE3YXX-01

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

Property

Address D0503, 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* 84.1	Open
Unconditioned* 3.8	NatHERS climate zone
Total 87.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

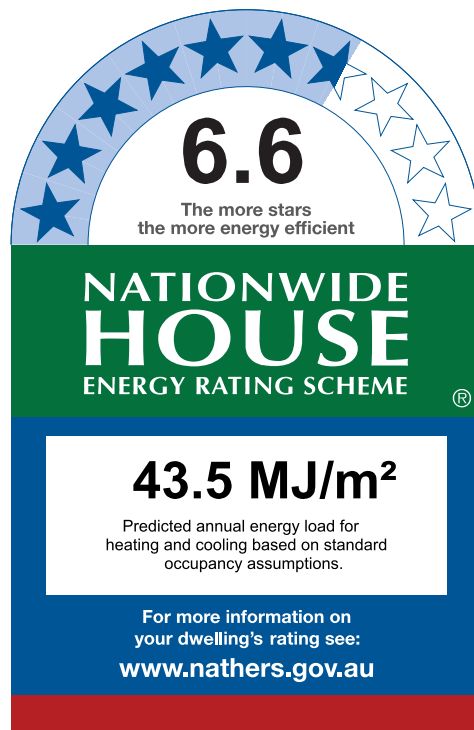
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
29.1	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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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	2455	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W05	2700	2095	Sliding	45	S	None
Ensuite	ALM-002-01 A	W04	2700	1505	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	W01	2700	2200	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02	2700	2200	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-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	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-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-A	2740	4080	E	3310	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	3057	S		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3810	S		No
Ensuite	HEBEL-100-REFL-CAV1-A	2740	2434	S		No
Ensuite	HEBEL-100-REFL-CAV1-A	2740	27	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	40	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	5949	E	3276	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	34	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	314	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	323	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	25	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	50.6	2.00
INT-PB	Internal Plasterboard Stud Wall	63.3	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	3.8	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	11.5	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	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	1.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	44.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.2	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
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	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 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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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5NXI2L-01

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

Property

Address D0504, 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* 46.2	Open
Unconditioned* 6.1	NatHERS climate zone
Total 52.3	56 - Mascot AMO
Garage 0.0	



Accredited assessor

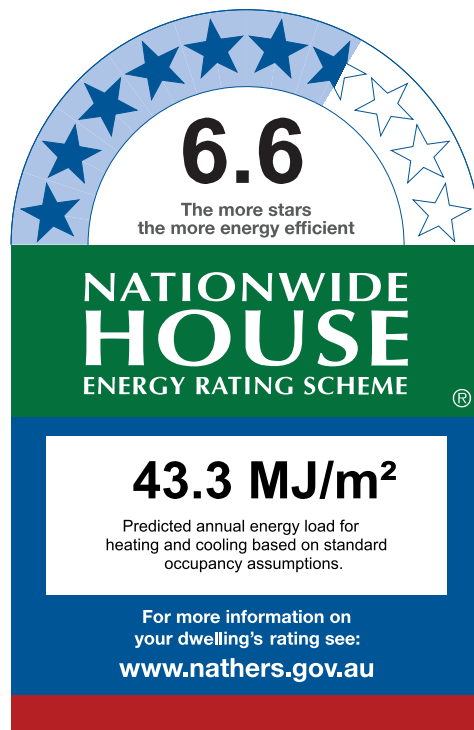
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
28.7	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-5NXI2L-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.



Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 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	1950	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W02	2700	937	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*
Kitchen/Living	ALM-002-01 A	W03	2700	845	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04	2700	1588	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	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-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Ref 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	3006	S	3122	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1876	W	3126	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	678	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	226	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3688	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	17	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	87	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.6	2.00
INT-PB	Internal Plasterboard Stud Wall	22.9	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	6.1	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
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.3	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
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
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-LE8KXK-01

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

Property

Address D0505, 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* 46.2	Open
Unconditioned* 6.1	NatHERS climate zone
Total 52.3	56 - Mascot AMO
Garage 0.0	



Accredited assessor

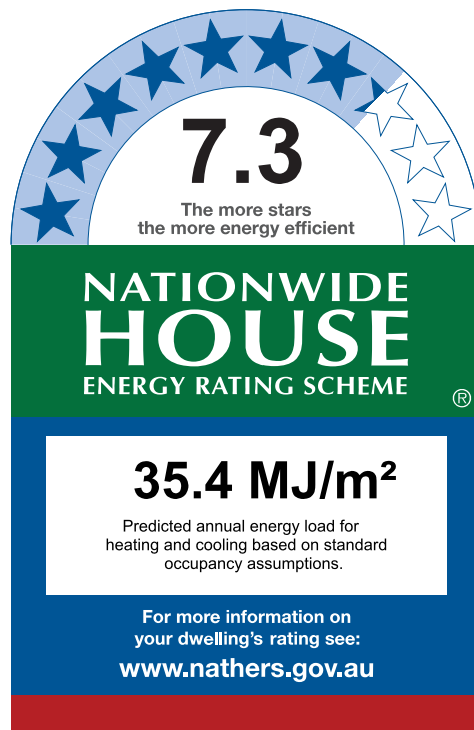
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
22.0	13.4
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.

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-a	2700	1950	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W02-a	2700	937	Casement	90	E	None
Kitchen/Living	ALM-002-01 A	W04-a	2700	1588	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
Bathroom	HEBEL-100-REFL-CAV1-A	2740	24	S		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1-A	2740	41	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	3006	S	3122	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	44	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	386	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	1876	E	3126	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	41	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	226	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	3688	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	337	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	87	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.5	2.00
INT-PB	Internal Plasterboard Stud Wall	22.9	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	6.1	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
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.3	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
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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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-HFX6AU-01

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

Property

Address D0506, 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* 74.8	Open
Unconditioned* 4.5	NatHERS climate zone
Total 79.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

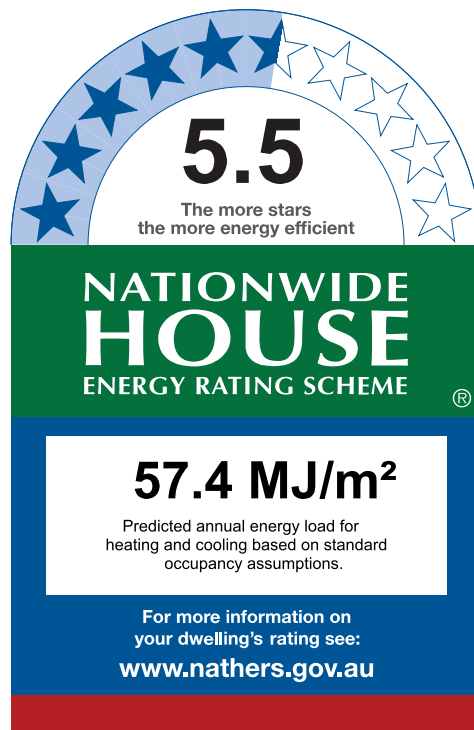
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
44.7	12.7
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-HFX6AU-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	1440	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W04	2700	2500	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W06	2700	4235	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*
Kitchen/Living	ALM-002-01 A	W05	2700	910	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-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

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1-B	2740	125	E		Yes
Bathroom	HEBEL-100-REFL-CAV1-A	2740	15	E		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	90	E		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	15	E		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	15	E		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	14	E		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	14	E		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	14	E		Yes
Bathroom	HEBEL-100-REFL-CAV1-B	2740	14	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	3408	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1122	W	5698	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3599	W		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	111	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	18	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	386	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	17	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	18	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	18	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	17	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	18	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	18	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	18	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	18	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	18	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5610	S	2345	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	6055	W		Yes

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.0	2.00
INT-PB	Internal Plasterboard Stud Wall	64.5	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	4.5	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	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	4.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.6	N/A	0.00	Tile
Pantry	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*
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
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	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

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-6QE2U8-01

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

Property

Address D0507, 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* 68.8	Open
Unconditioned* 3.8	NatHERS climate zone
Total 72.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

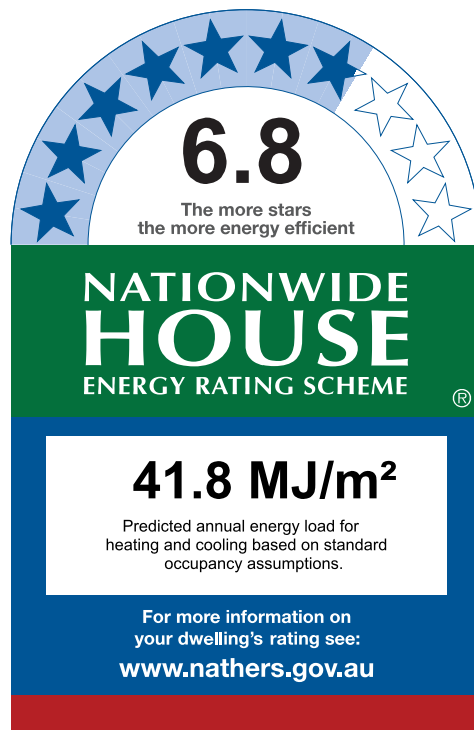
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
24.3	17.6
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?

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-d	2700	1610	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W04-c	2700	2055	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05	2700	870	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-d	2700	3978	Sliding	66	N	None
Kitchen/Living	ALM-002-01 A	W02-d	2700	1460	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-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	1830	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2200	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	318	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2051	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5038	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4989	N	3213	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2166	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	34.7	2.00
INT-PB	Internal Plasterboard Stud Wall	58.4	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	14.0	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	3.8	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	2.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.4	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
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	1	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
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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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-RWFVOE-01

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

Property

Address D0508, 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* 45.5	Open
Unconditioned* 4.3	NatHERS climate zone
Total 49.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

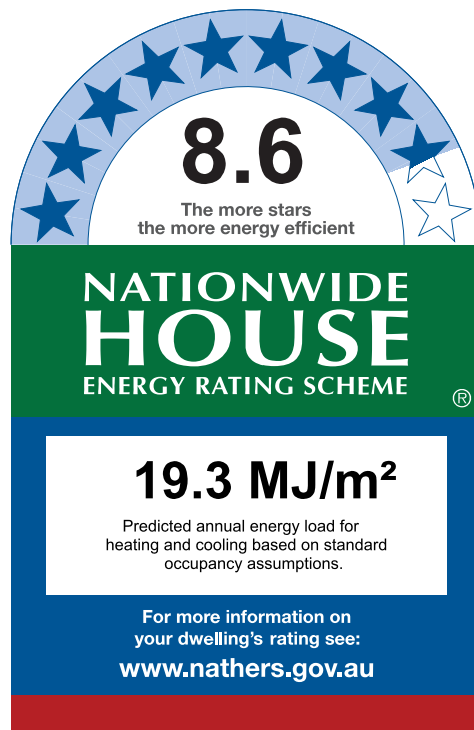
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
1.3	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-RWFVOE-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	W06-a	2700	1440	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W05-d	2700	2750	Sliding	66	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	3599	W	3984	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3980	N		No

* Refer to glossary.

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	71.4	2.00
INT-PB	Internal Plasterboard Stud Wall	20.6	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	4.3	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
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	28.8	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
Hallway	1	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
None			

* 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.
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-2VR5V4-01

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

Property

Address D0601, 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* 113.6	Open
Unconditioned* 4.5	NatHERS climate zone
Total 118.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

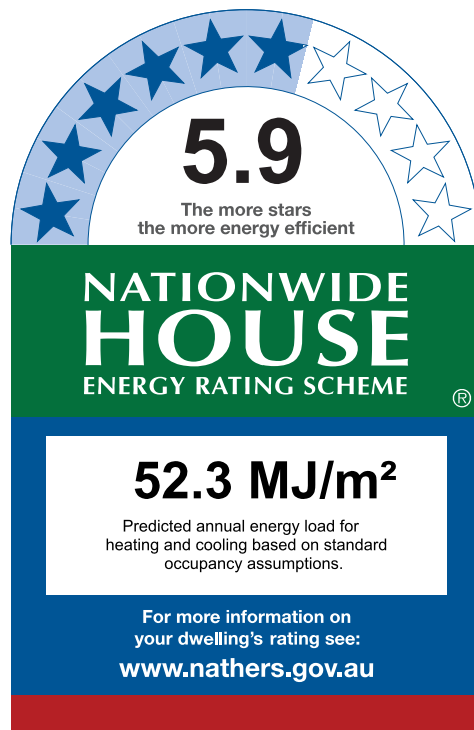
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
26.9	25.3
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-2VR5V4-01>. 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	W01	2700	4000	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W05	2700	1970	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W04	2700	2080	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	3935	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	1650	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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1-B	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.50	Medium	2.00	No

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	7155	N	2545	No
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	249	E		No
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	312	S		No
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	317	S		No
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1969	W		No
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3345	E	629	Yes
Bedroom 03	HEBEL-100-REFL-CAV1-B	2740	3155	N		Yes
Bedroom 03	HEBEL-100-REFL-CAV1-B	2740	3641	E	629	Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	21	E		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	56	NNE		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	8764	N	2545	No
Kitchen/Living	HEBEL-PARTITION1	2740	1757	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	169.3	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	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	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	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
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	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	48.2	N/A	0.00	Tile
Laundry	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	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	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
Bedroom 03	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
Entry	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
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Pantry	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	3	Downlight	200	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	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	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	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	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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

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

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

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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

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

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

Disclaimer

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

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

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

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

Glossary

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-XHBWOT-01

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

Property

Address D0602, 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* 102.2	Open
Unconditioned* 3.8	NatHERS climate zone
Total 106.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

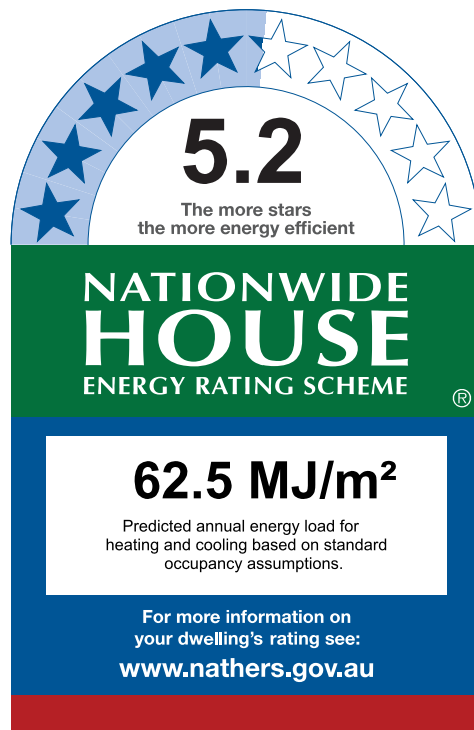
Name Duncan Hope
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Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
42.2	20.3
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

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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
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	W08	2700	845	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W07	2700	1545	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-002-01 A	W06	2700	1440	Sliding	45	S	None
Bedroom 03	ALM-002-01 A	W04	2700	2625	Sliding	45	E	None
Bedroom 03	ALM-002-01 A	W05	2700	1865	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W01	2700	2135	Sliding	45	E	None
Kitchen/Living	ALM-002-03 A	W02	2700	2200	Sliding	45	E	None
Kitchen/Living	ALM-002-03 A	W03	2700	2520	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				

* Refer to glossary.

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	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	321	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1821	W	6756	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	677	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3578	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3599	E	4080	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3366	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5906	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3323	S	4245	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	322	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	551	E	4080	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	154.3	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	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.2	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
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	4.9	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	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	34.3	N/A	0.00	Tile
Laundry	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	9.9	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	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
Bedroom 03	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
Entry	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
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Study	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
Bedroom 03	2	Downlight	200	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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
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
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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

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

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

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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-3FAQWY-01

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

Property

Address D0603, 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*	71.0	Open
Unconditioned*	4.2	NatHERS climate zone
Total	75.2	56 - Mascot AMO
Garage	0.0	



Accredited assessor

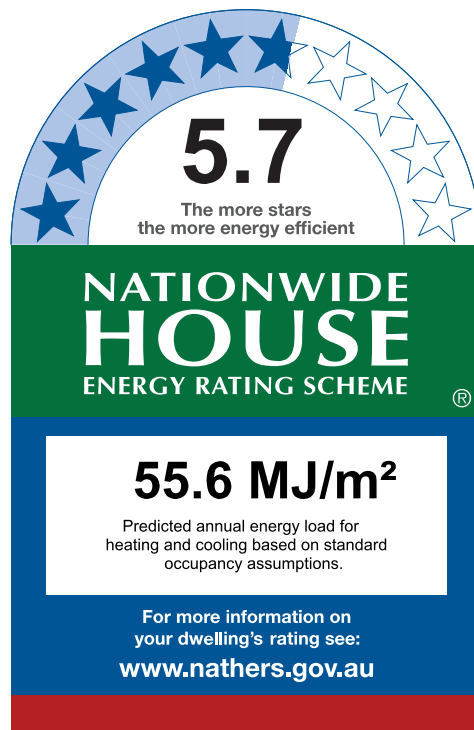
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
37.1	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-3FAQWY-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	W01	2700	1885	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W02	2700	1940	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03	2700	1100	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	W04	2700	1505	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	0.50	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-100-REFL-CAV1	2740	3004	S	3077	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3090	S	3083	Yes
Hallway	HEBEL-100-REFL-CAV1	2740	188	W		Yes
Hallway	HEBEL-100-REFL-CAV1	2740	85	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	301	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	254	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1821	E	7089	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3704	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	342	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	127.7	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	Carpet
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	11.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	0.00	Carpet
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	32.9	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	2.50	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	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	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
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	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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Glossary

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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
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5LOMTC-01

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

Property

Address D0604, 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* 77.9	Open
Unconditioned* 4.3	NatHERS climate zone
Total 82.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

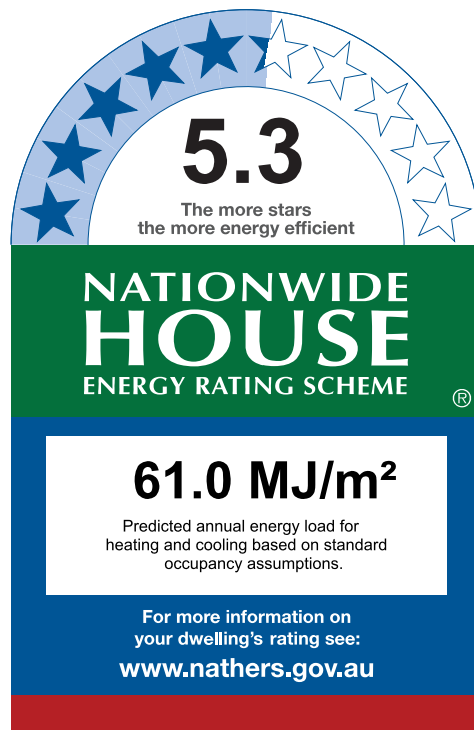
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
44.2	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-5LOMTC-01>. 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
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	W04	2700	1505	Sliding	45	S	None
Bedroom 02	ALM-002-03 A	W03	2700	2500	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-002-03 A	W01	2700	4275	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W02	2700	910	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-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) 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-100-REFL-CAV1	2740	3408	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1117	W	5722	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	22	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5609	S	2359	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6033	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	117.9	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	4.3	N/A	0.00	Carpet
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	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	8.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.6	N/A	0.00	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	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	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

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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
Pantry	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
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	0.00	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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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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5YGKYX-01

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

Property

Address D0605, 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*	108.1	Open
Unconditioned*	3.8	NatHERS climate zone
Total	111.9	56 - Mascot AMO
Garage	0.0	



Accredited assessor

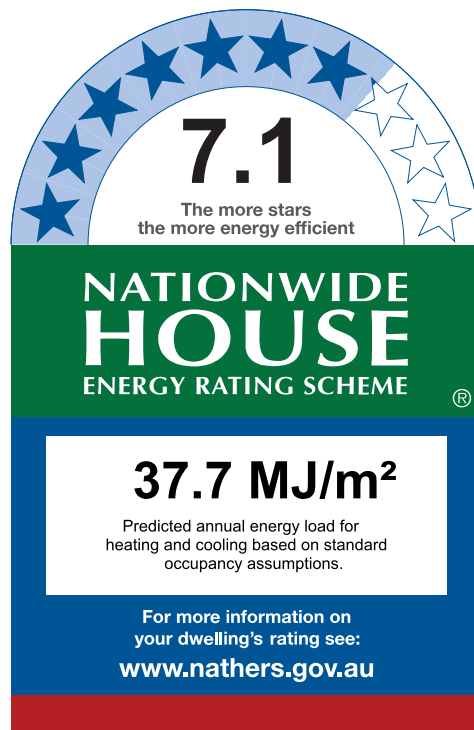
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
26.1	11.6
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-5YGKYX-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	1395	Sliding	45	N	None
Bedroom 02	ALM-002-01 A	W04-c	2700	2055	Sliding	45	W	None
Bedroom 03	ALM-002-01 A	W06	2700	3005	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	W05	2700	870	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	910	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03-d	2700	3978	Sliding	66	N	None
Kitchen/Living	ALM-002-01 A	W02-d	2700	1460	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-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-B	2740	1503	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3179	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1-B	2740	3147	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1902	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5412	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	1995	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4989	N	3213	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2166	N		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	5.0	2.00
INT-PB	Internal Plasterboard Stud Wall	135.5	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	3.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	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	5.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	58.6	N/A	0.00	Tile

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.00	Carpet
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	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
Bedroom 03	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
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Pantry	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	100	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	4	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	0.00	0.50	Medium

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-3QHNFK-01

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

Property

Address E0101, 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*	74.4	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	78.2	56 - Mascot AMO
Garage	0.0	



Accredited assessor

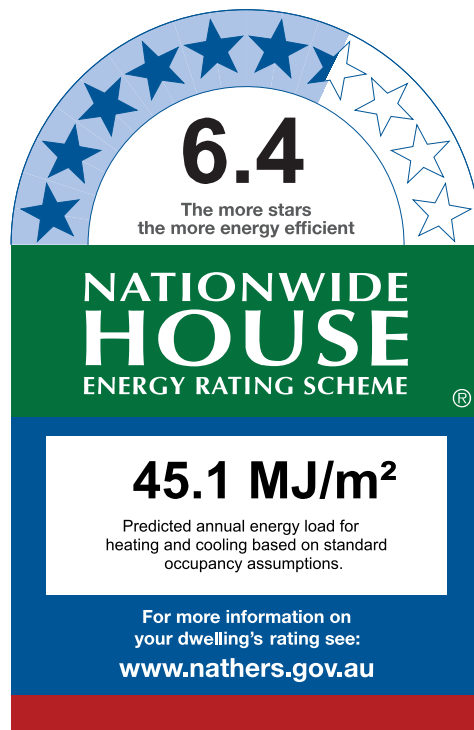
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
20.6	24.5
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-3QHNFK-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 1	ALM-002-01 A	W03	2700	1395	Sliding	45	W	None
Bedroom 2	ALM-002-01 A	W01	2700	1950	Sliding	45	W	None
Kitchen/Living 15	ALM-002-01 A	W02	2700	1590	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
Kitchen/Living 15	2040	1100	90	N

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	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 1	HEBEL-100-REFL-CAV1	2740	1481	W		Yes
Bedroom 1	HEBEL-100-REFL-CAV1	2740	135	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 1	HEBEL-100-REFL-CAV1	2740	57	N		Yes
Bedroom 2	HEBEL-100-REFL-CAV1	2740	1693	N	2248	Yes
Bedroom 2	HEBEL-100-REFL-CAV1	2740	593	W	4344	Yes
Bedroom 2	HEBEL-100-REFL-CAV1	2740	3006	W	2651	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	318	W		Yes
Kitchen/Living 15	HEBEL-100-REFL-CAV1	2740	1461	N	5360	Yes
Kitchen/Living 15	HEBEL-100-REFL-CAV1	2740	1580	W	10417	Yes
Kitchen/Living 15	HEBEL-100-REFL-CAV1	2740	318	S		Yes
Kitchen/Living 15	HEBEL-100-REFL-CAV1	2740	2421	W	10417	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	15.5	2.00
INT-PB	Internal Plasterboard Stud Wall	118.1	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	3.8	N/A	1.26	Tile
Bedroom 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.3	N/A	1.26	Carpet
Bedroom 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	1.26	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	1.26	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	1.26	Tile
Kitchen/Living 15	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.2	N/A	1.26	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	1.26	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
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 1	2	Downlight	200	Sealed
Bedroom 2	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living 15	5	Downlight	200	Sealed
Kitchen/Living 15	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.

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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).

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-GKG5UQ-01

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

Property

Address E0102, 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* 97.4	Suburban
Unconditioned* 11.3	NatHERS climate zone
Total 108.7	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.

5.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

53.0 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
39.4	13.6
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 02	ALM-002-01 A	W01	2700	2775	Sliding	45	W	None
Bedroom 2	ALM-002-01 A	W03	2700	1145	Sliding	45	E	None
Bedroom 3	ALM-002-01 A	W04	2700	1205	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	W02	2700	3240	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	0.50	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
Bathroom	HEBEL-100-REFL-CAV1	2740	2413	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	4636	W	2142	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2858	N		Yes
Bedroom 2	HEBEL-100-REFL-CAV1	2740	3006	E	3193	Yes
Bedroom 2	HEBEL-100-REFL-CAV1	2740	2795	S		Yes
Bedroom 2	HEBEL-100-REFL-CAV1	2740	350	W		Yes
Bedroom 3	HEBEL-100-REFL-CAV1	2740	1355	E	5988	Yes
Day Time 19	HEBEL-100-REFL-CAV1	2740	332	S		No
Day Time 19	HEBEL-100-REFL-CAV1	2740	86	S		No
Day Time 19	HEBEL-100-REFL-CAV1	2740	22	W		No
Hallway	HEBEL-100-REFL-CAV1	2740	350	E		Yes
Pantry	HEBEL-100-REFL-CAV1	2740	1800	N		No
Study	HEBEL-100-REFL-CAV1	2740	2476	N		No
bathroom	HEBEL-100-REFL-CAV1	2740	318	S		Yes
kitchen/living	HEBEL-100-REFL-CAV1	2740	7984	N		Yes
kitchen/living	HEBEL-100-REFL-CAV1	2740	3959	E	2241	Yes
kitchen/living	HEBEL-100-REFL-CAV1	2740	952	S		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	57.1	2.00
INT-PB	Internal Plasterboard Stud Wall	86.2	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	6.5	N/A	1.26	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	1.26	Carpet

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	1.26	Carpet
Bedroom 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	1.26	Carpet
Day Time 19	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.8	N/A	1.26	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	1.26	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	1.26	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	1.26	Carpet
bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	1.26	Tile
kitchen/living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.4	N/A	1.26	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 02	2	Downlight	200	Sealed
Bedroom 2	2	Downlight	200	Sealed
Bedroom 3	2	Downlight	200	Sealed
Day Time 19	1	Downlight	200	Sealed
Hallway	1	Downlight	200	Sealed
Pantry	1	Downlight	200	Sealed
Study	1	Downlight	200	Sealed
bathroom	1	Exhaust Fan	350	Sealed
bathroom	1	Downlight	200	Sealed
kitchen/living	7	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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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-JJSBIP-01

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

Property

Address E0103, 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*	52.3	Suburban
Unconditioned*	3.9	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.

5.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

52.5 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
37.0	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-JJSBIP-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	ALM-002-01 A	W02	2700	1375	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	3195	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	0.50	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-100-REFL-CAV1	2740	1418	E	5988	Yes
Bedroom	HEBEL-100-REFL-CAV1	2740	2797	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	HEBEL-100-REFL-CAV1	2740	1376	E	3191	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4022	E	3193	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	14.2	2.00
INT-PB	Internal Plasterboard Stud Wall	73.9	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	1.26	Tile
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.3	N/A	1.26	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.9	N/A	1.26	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	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			

* 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).

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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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I327ZQ-01

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

Property

Address E0104, 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*	70.0	Suburban
Unconditioned*	3.9	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.

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
39.8	10.0
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-I327ZQ-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 2	ALM-002-01 A	W01	2700	2645	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02	2700	3135	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	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 1	HEBEL-100-REFL-CAV1	2740	3197	S		Yes
Bedroom 1	HEBEL-100-REFL-CAV1	2740	1672	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 1	HEBEL-100-REFL-CAV1	2740	21	W		Yes
Bedroom 2	HEBEL-100-REFL-CAV1	2740	3239	E	3193	Yes
Bedroom 2	HEBEL-100-REFL-CAV1	2740	3917	S	1731	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1609	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	3193	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	6.5	2.00
INT-PB	Internal Plasterboard Stud Wall	93.6	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	3.9	N/A	1.26	Tile
Bedroom 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	1.26	Carpet
Bedroom 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	N/A	1.26	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	1.26	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.8	N/A	1.26	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	1.26	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

* Refer to glossary.



Ceiling penetrations*

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

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 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-C7MQ2A-01

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

Property

Address E0105, 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*	5.8	NatHERS climate zone
Total	50.8	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.

6.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

46.0 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
28.4	17.6
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-C7MQ2A-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	W01	2700	1480	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	2665	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	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	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2688	W	4403	Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	63	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	3112	N	4084	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3620	N	1121	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2709	E	3362	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	85	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	254	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6753	W	4378	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	10.0	2.00
INT-PB	Internal Plasterboard Stud Wall	55.5	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	5.8	N/A	1.26	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	N/A	1.26	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	1.26	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	24.3	N/A	1.26	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	1.26	Tile

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) 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
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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) with Suspended PB Ceiling	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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

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

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

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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).
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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.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I3INAV-01

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

Property

Address E0106, 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*	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.

5.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

60.2 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
37.6	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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-I3INAV-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	ALM-002-01 A	W01	2700	1395	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	2665	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	4595	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*
HEBEL-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.50	Medium	2.00	Yes
INT-PB	INT-PB: Internal Plasterboard Stud Wall	0.50	Medium	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	INT-PB	2740	33	W		Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	INT-PB	2740	33	W		Yes
Bedroom	HEBEL-100-REFL-CAV1	2740	2307	N	6748	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N	1286	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5377	E	6459	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4953	W	7082	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	76.4	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	3.8	N/A	1.26	Tile
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	1.26	Carpet
Cupboard	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	1.26	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	1.26	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	29.6	N/A	1.26	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	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

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-03EVYM-01

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

Property

Address E0107, 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*	61.5	Suburban
Unconditioned*	4.2	NatHERS climate zone
Total	65.8	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

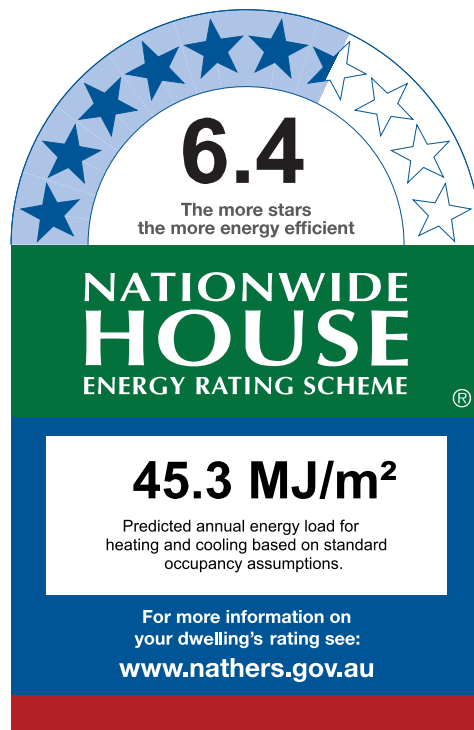
Declaration of interest No Conflict of Interest

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
32.1	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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-03EVYM-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	ALM-002-01 A	W02	2700	740	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	3300	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-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	0.50	Medium	0.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom	HEBEL-100-REFL-CAV1-A	2740	1778	W	10417	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	23	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3832	N	4715	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	101	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2033	W	5772	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	25	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	23	W		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	318	S		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	11.7	2.00
INT-PB	Internal Plasterboard Stud Wall	105.5	2.00
INT-PB	Internal Plasterboard Stud Wall	3.3	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	1.26	Tile
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	1.26	Carpet
Cupboard	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	1.26	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	1.26	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.5	N/A	1.26	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	N/A	1.26	Carpet

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	2	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

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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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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

19.2 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
3.1	16.1
MJ/m ²	MJ/m ²

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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?

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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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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.
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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-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

* Refer to glossary.

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

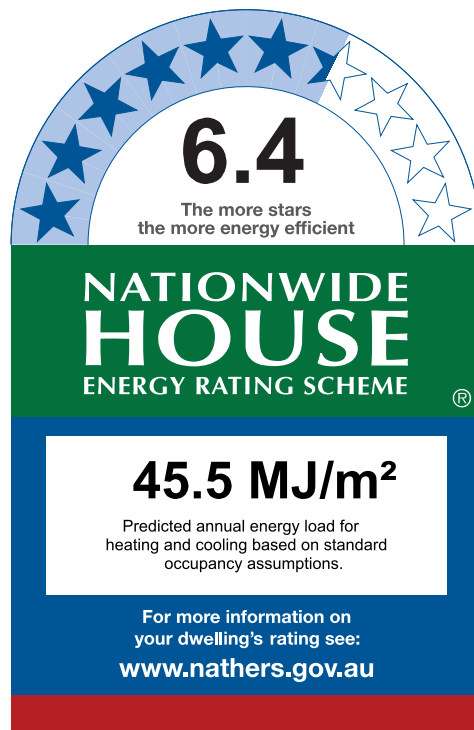
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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



Thermal Performance

Heating	Cooling
25.5	20.0
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.

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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 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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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-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

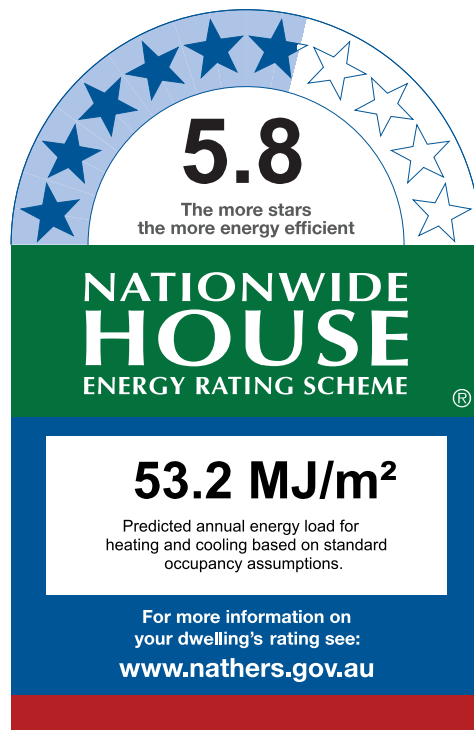
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



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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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-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

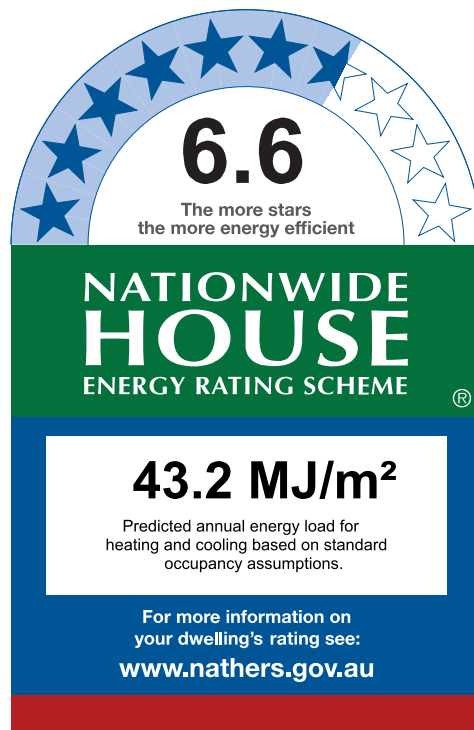
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
31.2	12.1
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?

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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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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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-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

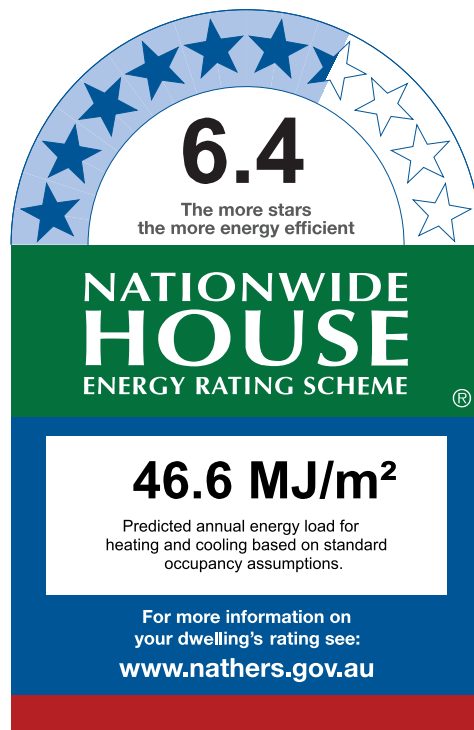
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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

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-YMIIV2-01>. 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	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

* Refer to glossary.

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			

* 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
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

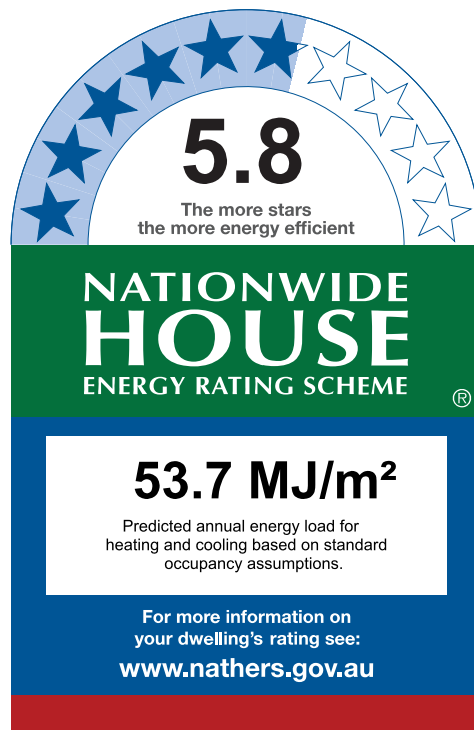
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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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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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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.
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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).

* Refer to glossary.

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

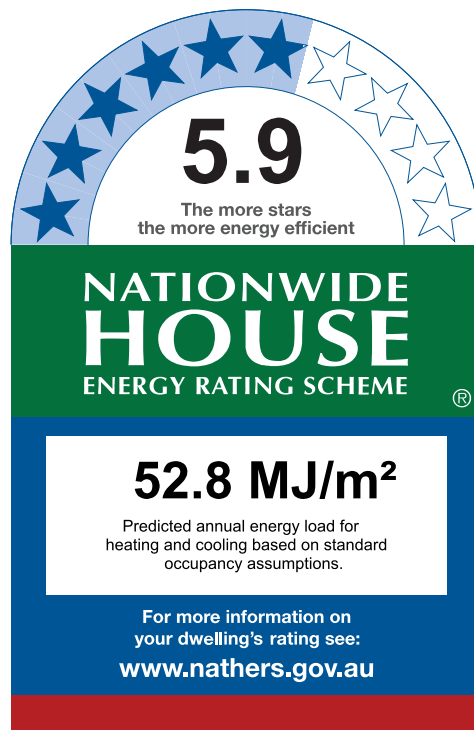
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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Thermal Performance

Heating	Cooling
40.6	12.2
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-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 - 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.
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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

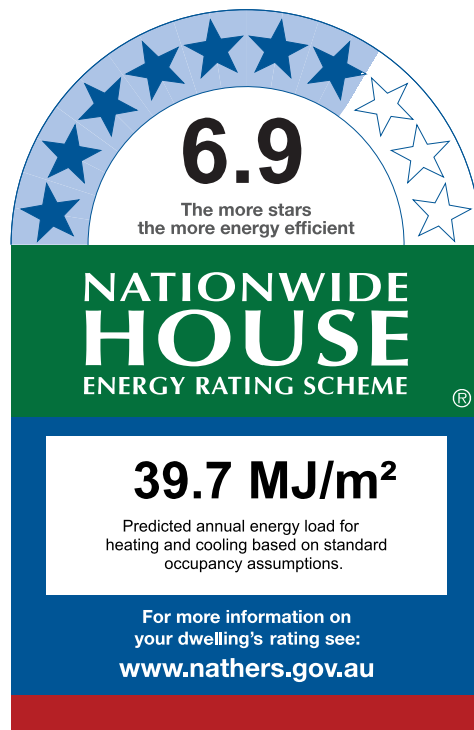
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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

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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	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).

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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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

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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?

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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	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			

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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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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-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.

5.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

59.9 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
33.0	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

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).

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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.

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
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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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-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

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			

* 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.

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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).

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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-01

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

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* 48.4	Suburban
Unconditioned* 8.5	NatHERS climate zone
Total 56.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

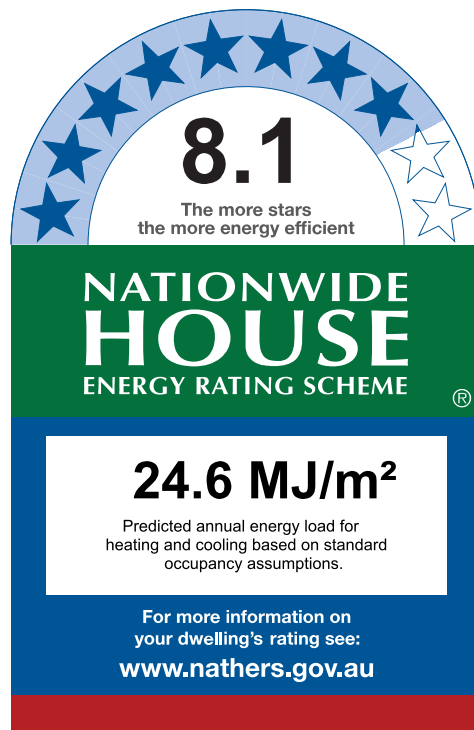
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
5.8	18.8
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-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	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	3749	N	2353	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
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	265	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	334	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	310	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	14.7	2.00
INT-PB	Internal Plasterboard Stud Wall	76.5	2.00
INT-PB	Internal Plasterboard Stud Wall	3.4	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	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	34.4	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
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

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-6NXU71-01

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

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* 73.8	Suburban
Unconditioned* 0.0	NatHERS climate zone
Total 73.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

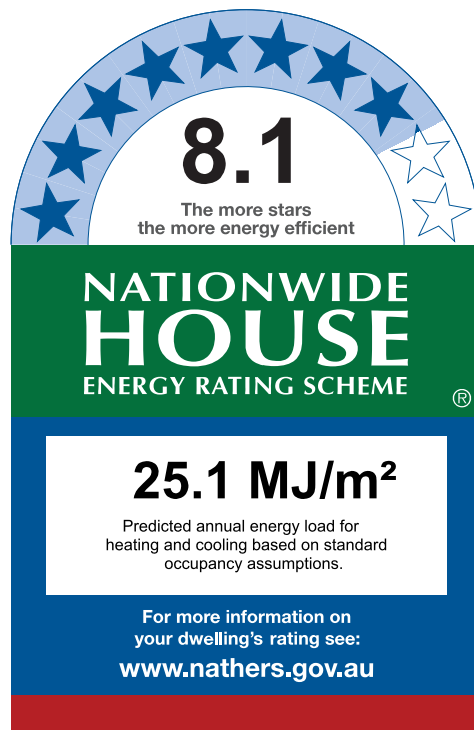
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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Thermal Performance

Heating	Cooling
8.1	17.0
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 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
INT-PB	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.00	No

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	2038	W	3234	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	5315	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W	1519	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1710	N	2249	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	28	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	30	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1588	N		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	327	S		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	2404	W		Yes
Kitchen/Living	INT-PB	2740	141	W		Yes
Kitchen/Living	INT-PB	2740	183	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	382	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	27.3	2.00
INT-PB	Internal Plasterboard Stud Wall	55.1	2.00
INT-PB	Internal Plasterboard Stud Wall	12.0	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	14.5	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	8.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.3	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
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	2	Downlight	200	Sealed
Ensuite	2	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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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-01

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

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*	73.9	Suburban
Unconditioned*	3.7	NatHERS climate zone
Total	77.6	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

47.0 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
28.8	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-GBWI9N-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	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-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	12	S		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	5398	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2965	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	E	3339	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1587	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	S	3757	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3983	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	N		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	49.0	2.00
INT-PB	Internal Plasterboard Stud Wall	66.8	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	3.7	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
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	4.7	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
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	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
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.

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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.
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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-9BBQVD-01

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

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*	70.1	Suburban
Unconditioned*	3.9	NatHERS climate zone
Total	74.0	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

38.5 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
25.6	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-9BBQVD-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*
Bedroom 01	ALM-002-01 A	W01	2700	1080	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	1905	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-002-04 A	W04	2700	1505	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	1525	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-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	1334	E	3911	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	E	2450	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1461	S	1466	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4107	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2455	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	111.3	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	13.6	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	3.9	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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

* 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
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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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-KGUY7-01

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

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* 48.8	Suburban
Unconditioned* 4.3	NatHERS climate zone
Total 53.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

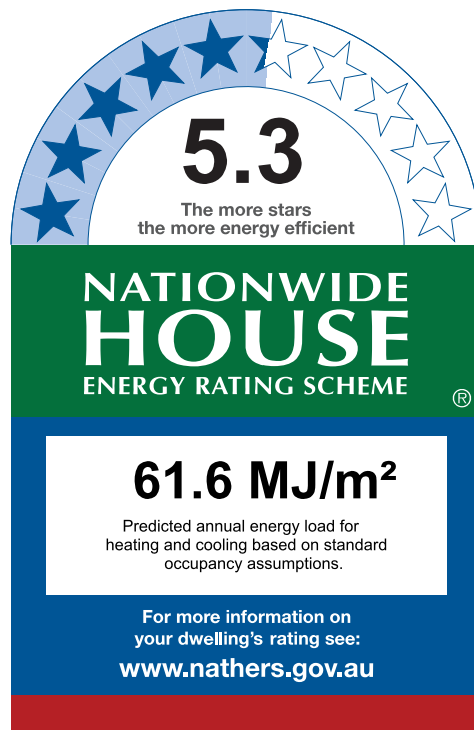
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
35.5	26.1
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-KGUY7-01>. 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*
Bedroom 01	ALM-002-04 A	W01	2700	1100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	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	W02	2700	3555	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	2178	E	4205	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4206	S	2406	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3916	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	78.2	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	4.3	N/A	0.00	Carpet
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	34.5	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	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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I5757C-01

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

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*	74.0	Suburban
Unconditioned*	3.8	NatHERS climate zone
Total	77.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

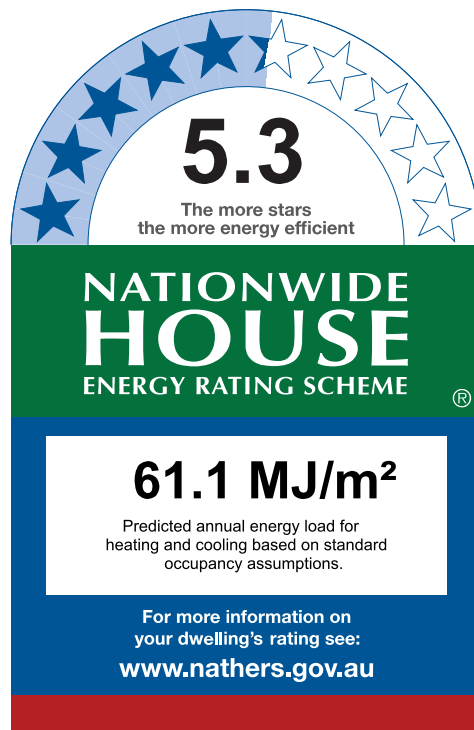
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
41.9	19.2
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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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-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	3598	S	1286	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S	1286	Yes
Entry	HEBEL-100-REFL-CAV1	2740	301	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	13	E		Yes
Entry	HEBEL-100-REFL-CAV1	2740	163	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5588	S	2196	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	910	E	5583	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2710	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	35	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4213	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	84	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	106.1	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	3.8	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	10.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.5	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
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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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-5DFB0W-01

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

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.

7.0
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

39.0 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
19.2	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-5DFB0W-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 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-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	1630	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	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-100-REFL-CAV1	2740	106	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1503	W	4040	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	S	2933	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	125	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	107	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	123.4	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	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
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	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

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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-Z6SLH9-01

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

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

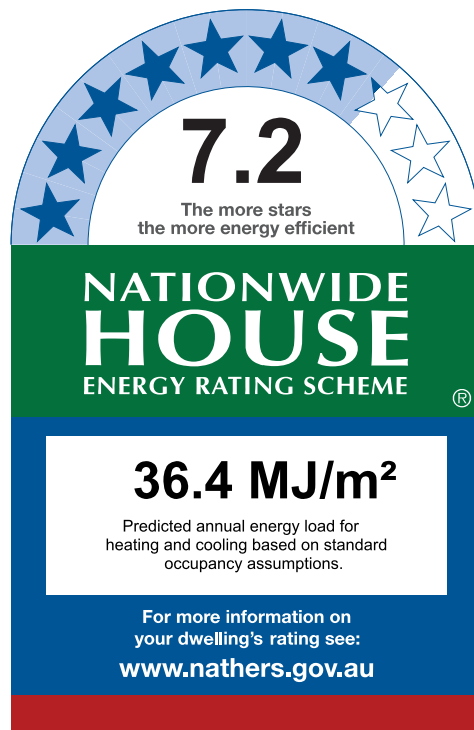
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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	17.8
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-Z6SLH9-01>. 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	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-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	1715	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	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-100-REFL-CAV1	2740	1461	E	3994	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	S	2933	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	116.6	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	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
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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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-N3WP8H-01

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

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

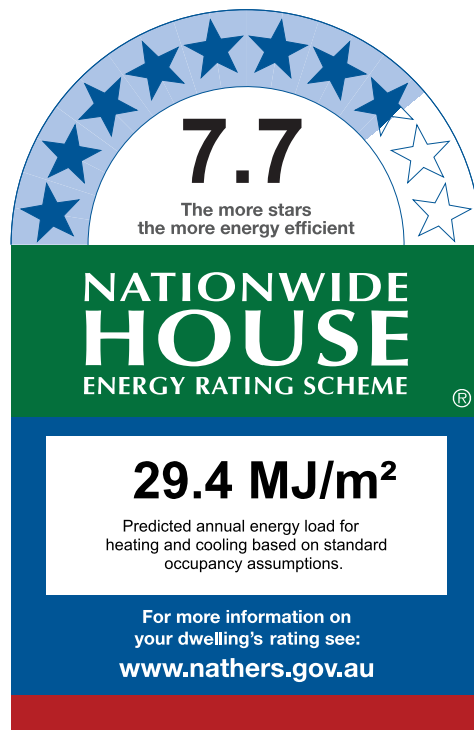
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
11.0	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-N3WP8H-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	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-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.32	Light (Surfmist)	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-PARTITION1	2740	1567	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-PARTITION1	2740	61	W		Yes
Bedroom 02	HEBEL-PARTITION1	2740	1374	W		Yes
Bedroom 02	HEBEL-PARTITION1	2740	3090	S		Yes
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	8.7	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	38.2	2.00
INT-PB	Internal Plasterboard Stud Wall	91.0	2.00
INT-PB	Internal Plasterboard Stud Wall	5.0	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	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
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			

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Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-5J6R7Z-01

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

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.

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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

33.8 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
12.2	21.6
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 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
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.32	Light (Surfmist)	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-PARTITION1	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-100-REFL-CAV1	2740	3069	N	3001	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes
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	22.5	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	0.00
INT-PB	Internal Plasterboard Stud Wall	17.7	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	5.8	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			

* 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	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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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

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-739JT6-01

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

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*	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.

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
31.5	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-739JT6-01>. 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*
Berom 01	ALM-002-01 A	W03	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1480	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-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

* 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	5377	E	2198	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4975	W	3238	Yes
Laundry	HEBEL-100-REFL-CAV1	2740	350	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	27.7	2.00
INT-PB	Internal Plasterboard Stud Wall	30.0	0.00
INT-PB	Internal Plasterboard Stud Wall	18.5	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	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

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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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-TYZCTL-01

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

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* 48.4	Open
Unconditioned* 8.5	NatHERS climate zone
Total 56.9	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

24.3 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
8.3	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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-TYZCTL-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	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	3749	N	2353	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
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	265	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	334	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	310	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	14.7	2.00
INT-PB	Internal Plasterboard Stud Wall	76.5	2.00
INT-PB	Internal Plasterboard Stud Wall	3.4	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	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	34.4	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
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

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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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-1KC90Y-01

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

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* 73.8	Open
Unconditioned* 0.0	NatHERS climate zone
Total 73.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

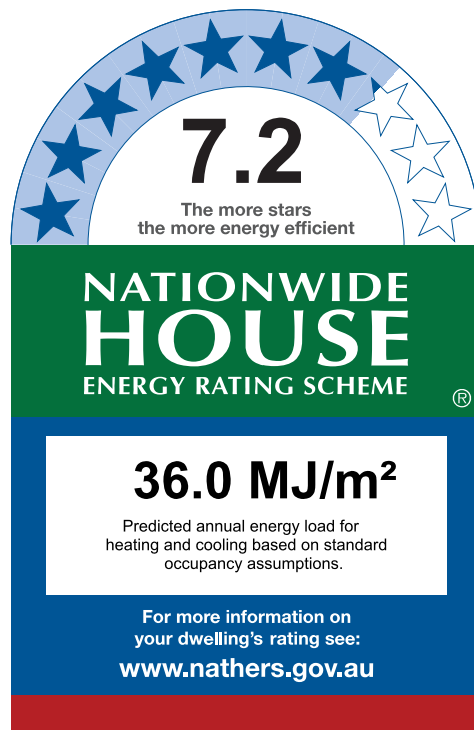
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
7.9	28.0
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-1KC90Y-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 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
INT-PB	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.00	No

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	2038	W	3234	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	5315	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W	1519	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1710	N	2249	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	28	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	30	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1588	N		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	327	S		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	2404	W		Yes
Kitchen/Living	INT-PB	2740	141	W		Yes
Kitchen/Living	INT-PB	2740	183	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	382	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	27.3	2.00
INT-PB	Internal Plasterboard Stud Wall	55.1	2.00
INT-PB	Internal Plasterboard Stud Wall	12.0	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	14.5	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	8.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.3	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
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	2	Downlight	200	Sealed
Ensuite	2	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).
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.
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-5KBEAK-01

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

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* 73.9	Open
Unconditioned* 3.7	NatHERS climate zone
Total 77.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

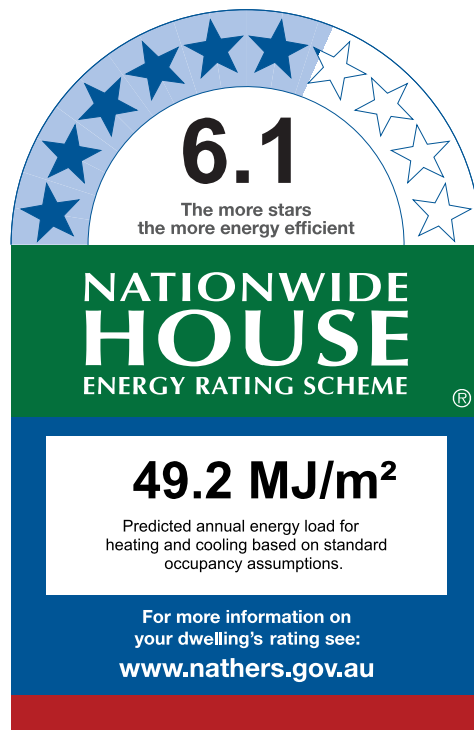
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
33.8	15.4
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-5KBEAK-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	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-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	12	S		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	5398	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2965	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	E	3339	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1587	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	S	3757	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3983	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	N		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	49.0	2.00
INT-PB	Internal Plasterboard Stud Wall	66.8	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	3.7	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
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	4.7	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
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	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
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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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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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-VS1IJC-01

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

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*	70.1 Open
Unconditioned*	3.9 NatHERS climate zone
Total	74.0 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.

6.9
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

40.8 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
30.0	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-VS1IJC-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 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
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-002-01 A	W01	2700	1080	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	1905	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-002-04 A	W04	2700	1505	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	1525	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-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	1334	E	3911	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	E	2450	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1461	S	1466	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4107	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2455	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	111.3	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	13.6	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	3.9	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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

* 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
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			

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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-01

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

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* 48.8	Open
Unconditioned* 4.3	NatHERS climate zone
Total 53.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

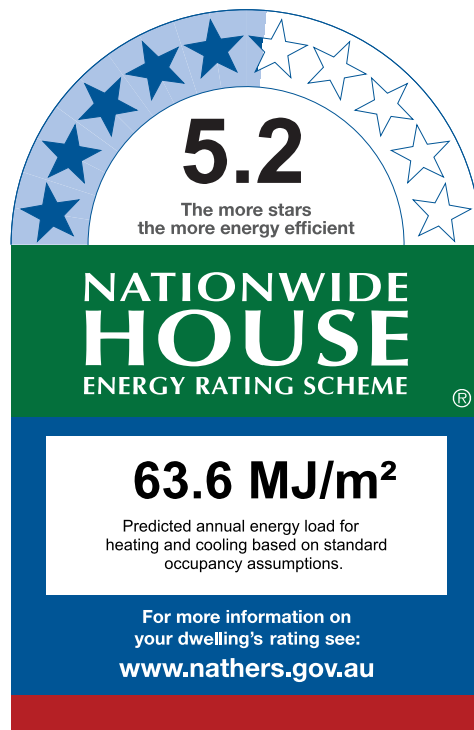
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
42.3	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-Z5A04B-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*
Bedroom 01	ALM-002-04 A	W01	2700	1100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	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	W02	2700	3555	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
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2178	E	4205	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4206	S	2406	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3916	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	78.2	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	4.3	N/A	0.00	Carpet
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	34.5	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	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).

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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-NC9P95-01

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

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* 74.0	Open
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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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
41.6	16.4
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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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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
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-002-03 A	W04	2700	2900	Sliding	45	S	None
Bedroom 02	ALM-002-03 A	W03	2700	2390	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-002-03 A	W01	2700	3240	Sliding	45	S	None
Kitchen/Living	ALM-002-03 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)	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	3598	S	1286	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S	1286	Yes
Entry	HEBEL-100-REFL-CAV1	2740	301	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	13	E		Yes
Entry	HEBEL-100-REFL-CAV1	2740	163	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5588	S	2196	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	910	E	5583	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2710	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	35	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4213	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	84	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	106.1	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	3.8	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

* 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	3.8	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.5	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
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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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-A6ZCGZ-01

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

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	Open
Unconditioned* 6.0	NatHERS climate zone
Total 72.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

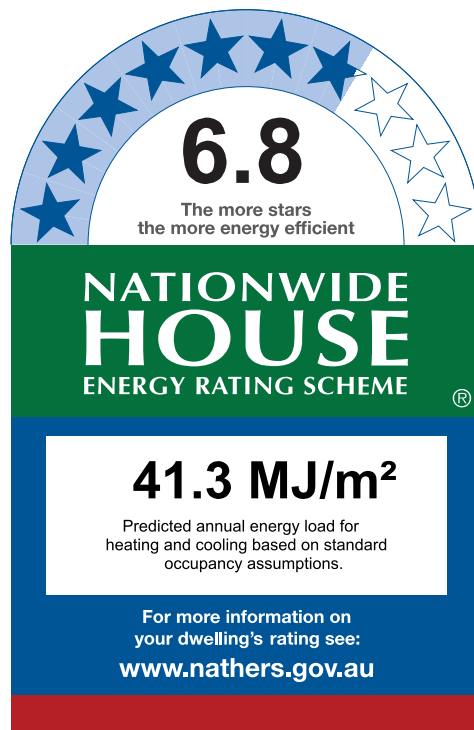
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
23.4	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-A6ZCGZ-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 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-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	1630	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	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-100-REFL-CAV1	2740	106	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1503	W	4040	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	S	2933	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	125	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	107	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	123.4	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	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
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	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.

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-LNDT7F-01

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

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	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.

7.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

37.8 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
22.8	15.0
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	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-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	1715	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	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-100-REFL-CAV1	2740	1461	E	3994	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	S	2933	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	116.6	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	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
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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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-DZKGZV-01

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

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	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.

7.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

31.4 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
13.6	17.8
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-DZKGZV-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	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-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.32	Light (Surfmist)	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-PARTITION1	2740	1567	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-PARTITION1	2740	61	W		Yes
Bedroom 02	HEBEL-PARTITION1	2740	1374	W		Yes
Bedroom 02	HEBEL-PARTITION1	2740	3090	S		Yes
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	8.7	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	38.2	2.00
INT-PB	Internal Plasterboard Stud Wall	91.0	2.00
INT-PB	Internal Plasterboard Stud Wall	5.0	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	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			

* 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
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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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-C7SPLU-01

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

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	Open
Unconditioned* 5.8	NatHERS climate zone
Total 50.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

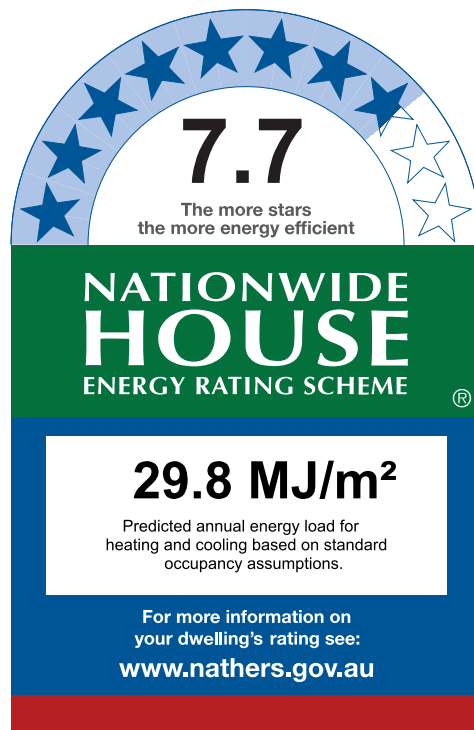
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
13.0	16.8
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	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
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.32	Light (Surfmist)	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-PARTITION1	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-100-REFL-CAV1	2740	3069	N	3001	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes
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	22.5	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	0.00
INT-PB	Internal Plasterboard Stud Wall	17.7	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	5.8	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			

* 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	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

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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-KES7H3-01

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

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*	47.4	Open
Unconditioned*	3.8	NatHERS climate zone
Total	51.2	56 - Mascot AMO
Garage	0.0	



Accredited assessor

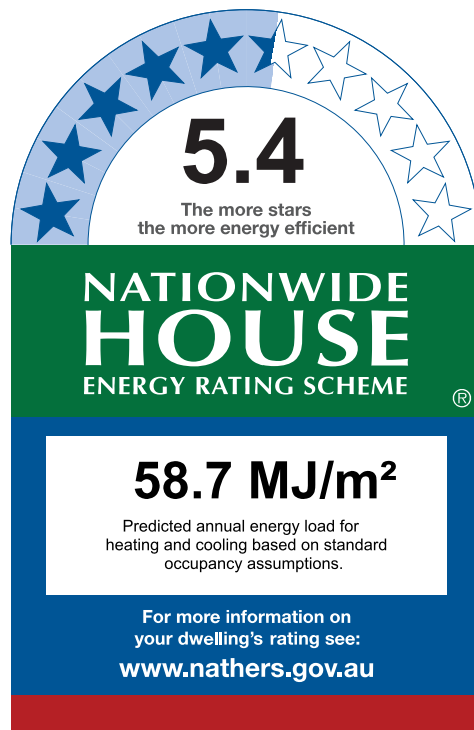
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
32.8	25.8
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-KES7H3-01>. 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*
Berom 01	ALM-002-01 A	W03	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1480	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-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

* 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	5377	E	2198	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4975	W	3238	Yes
Laundry	HEBEL-100-REFL-CAV1	2740	350	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	27.7	2.00
INT-PB	Internal Plasterboard Stud Wall	30.0	0.00
INT-PB	Internal Plasterboard Stud Wall	18.5	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	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

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

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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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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.

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-LIAPAI-01

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

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* 48.4	Open
Unconditioned* 8.5	NatHERS climate zone
Total 56.9	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

24.3 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
8.8	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-LIAPAI-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	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	3749	N	2353	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
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	265	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	334	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	310	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	14.7	2.00
INT-PB	Internal Plasterboard Stud Wall	76.5	2.00
INT-PB	Internal Plasterboard Stud Wall	3.4	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	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	34.4	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
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

About this report

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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.
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-THXYIY-01

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

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*	73.8	Open
Unconditioned*	0.0	NatHERS climate zone
Total	73.8	56 - Mascot AMO
Garage	0.0	



Accredited assessor

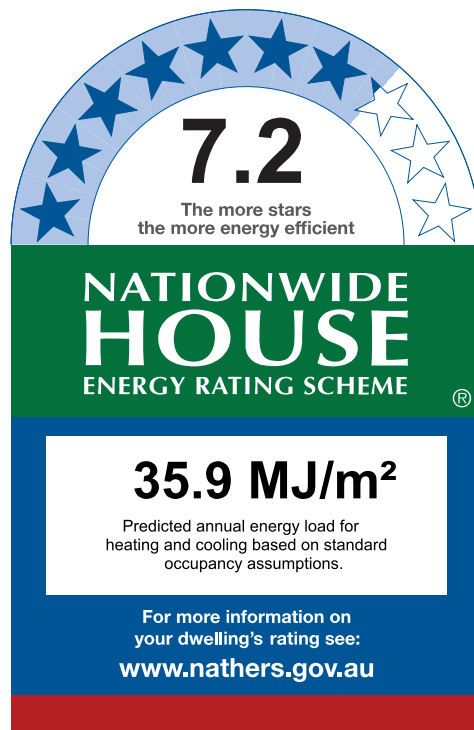
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
8.1	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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-THXYIY-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 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
INT-PB	INT-PB: Internal Plasterboard Stud Wall	0.32	Light (Surfmist)	2.00	No

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	2038	W	3234	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	5315	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	W	1519	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1710	N	2249	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	28	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	30	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1588	N		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	327	S		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	2404	W		Yes
Kitchen/Living	INT-PB	2740	141	W		Yes
Kitchen/Living	INT-PB	2740	183	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	382	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	27.3	2.00
INT-PB	Internal Plasterboard Stud Wall	55.1	2.00
INT-PB	Internal Plasterboard Stud Wall	12.0	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	14.5	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	8.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.3	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
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Ensuite	2	Downlight	200	Sealed
Ensuite	2	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

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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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).
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.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens 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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-U5213P-01

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

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* 73.9	Open
Unconditioned* 3.7	NatHERS climate zone
Total 77.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

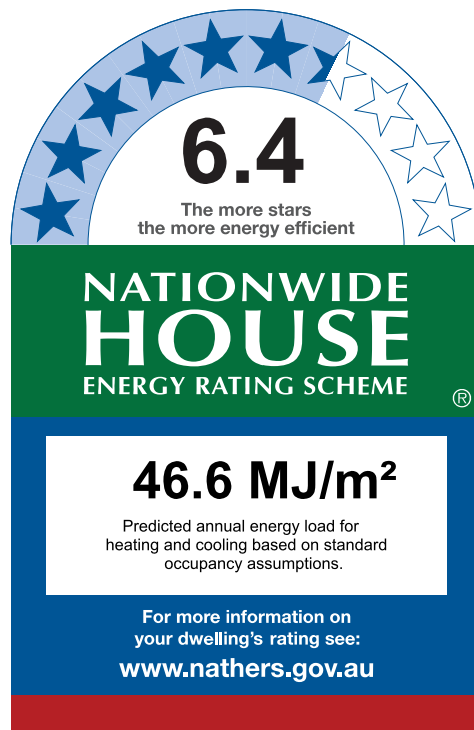
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
27.4	19.2
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-U5213P-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	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-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	12	S		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	5398	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2965	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	E	3339	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1587	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	S	3757	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3983	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	N		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	49.0	2.00
INT-PB	Internal Plasterboard Stud Wall	66.8	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	3.7	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
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	4.7	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
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	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
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.

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

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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-PT5VZY-01

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

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*	70.1 Open
Unconditioned*	3.9 NatHERS climate zone
Total	74.0 56 - Mascot AMO
Garage	0.0



Accredited assessor

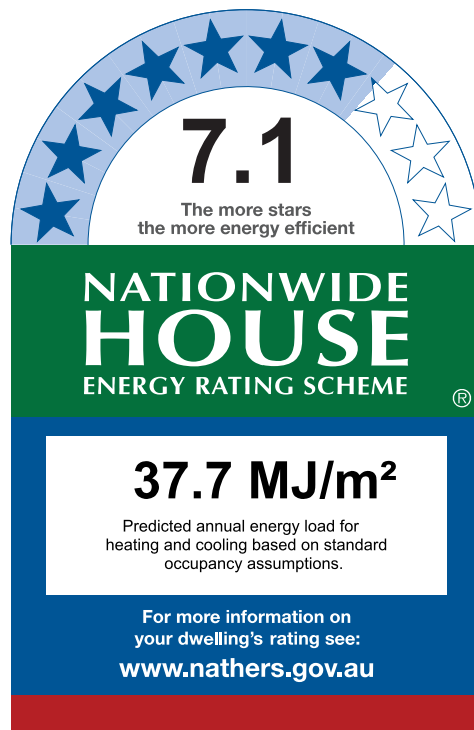
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
25.8	11.8
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-PT5VZY-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*
Bedroom 01	ALM-002-01 A	W01	2700	1080	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	1905	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-002-04 A	W04	2700	1505	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	1525	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-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	1334	E	3911	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	E	2450	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1461	S	1466	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4107	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2455	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	111.3	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	13.6	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	3.9	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	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

* 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
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			

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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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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-9LGBDD-01

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

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* 48.8	Open
Unconditioned* 4.3	NatHERS climate zone
Total 53.1	56 - Mascot AMO
Garage 0.0	



Accredited assessor

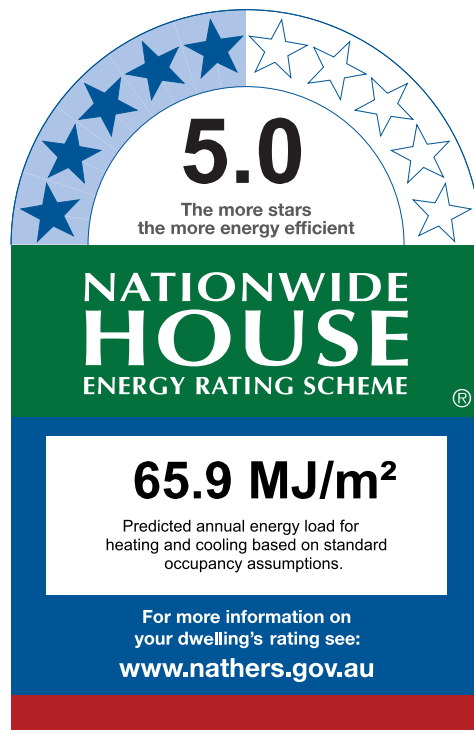
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
39.4	26.5
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-9LGBDD-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*
Bedroom 01	ALM-002-04 A	W01	2700	1100	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	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	W02	2700	3555	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	2178	E	4205	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4206	S	2406	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3916	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	78.2	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	4.3	N/A	0.00	Carpet
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	34.5	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	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).

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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-D6KTNQ-01

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

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* 74.0	Open
Unconditioned* 3.8	NatHERS climate zone
Total 77.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

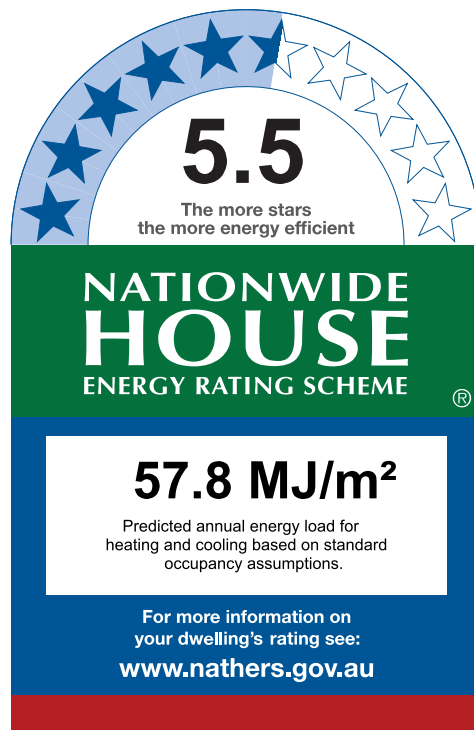
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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	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-D6KTNQ-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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
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-002-03 A	W04	2700	2900	Sliding	45	S	None
Bedroom 02	ALM-002-03 A	W03	2700	2390	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-002-03 A	W01	2700	3240	Sliding	45	S	None
Kitchen/Living	ALM-002-03 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)	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	3598	S	1286	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S	1286	Yes
Entry	HEBEL-100-REFL-CAV1	2740	301	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	13	E		Yes
Entry	HEBEL-100-REFL-CAV1	2740	163	N		Yes
Entry	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5588	S	2196	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	910	E	5583	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2710	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	35	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4213	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	84	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	106.1	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	3.8	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

* 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	3.8	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.5	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
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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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.
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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-D4QRU2-01

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

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.

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
24.1	17.4
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-D4QRU2-01>. 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

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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	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-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	1630	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	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-100-REFL-CAV1	2740	106	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1503	W	4040	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	S	2933	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	125	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	107	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	123.4	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	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
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	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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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-TLN-SPC-01

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

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.

7.0
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

38.4 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
23.4	15.0
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-TLN-SPC-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	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-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	1715	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	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-100-REFL-CAV1	2740	1461	E	3994	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	S	2933	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	116.6	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	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
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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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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-KKURX1-01

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

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.

7.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

31.4 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
14.0	17.4
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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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-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.32	Light (Surfmist)	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-PARTITION1	2740	1567	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-PARTITION1	2740	61	W		Yes
Bedroom 02	HEBEL-PARTITION1	2740	1374	W		Yes
Bedroom 02	HEBEL-PARTITION1	2740	3090	S		Yes
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	8.7	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	38.2	2.00
INT-PB	Internal Plasterboard Stud Wall	91.0	2.00
INT-PB	Internal Plasterboard Stud Wall	5.0	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	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			

* 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
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).

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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-GTE0SP-01

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

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

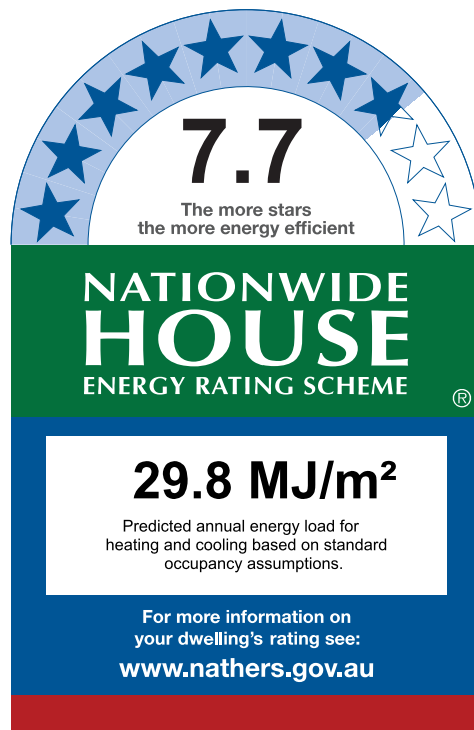
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
13.4	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-GTE0SP-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	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
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.32	Light (Surfmist)	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-PARTITION1	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-100-REFL-CAV1	2740	3069	N	3001	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes
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	22.5	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	0.00
INT-PB	Internal Plasterboard Stud Wall	17.7	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	5.8	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			

* 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	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.

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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-F5HTUK-01

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

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* 47.4	Open
Unconditioned* 3.8	NatHERS climate zone
Total 51.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

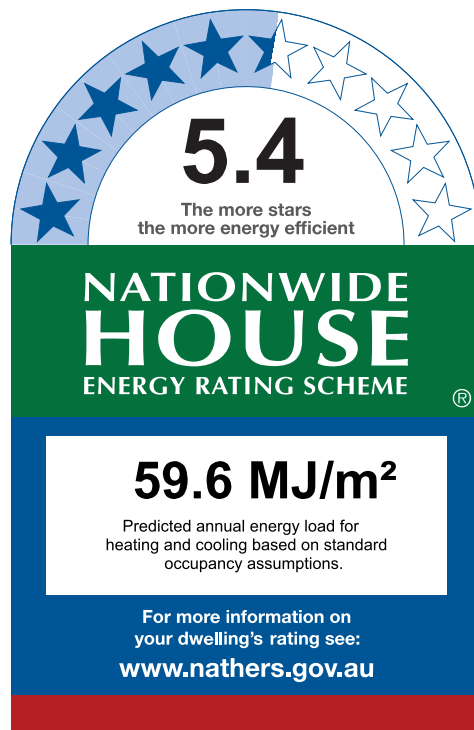
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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Thermal Performance

Heating	Cooling
33.8	25.8
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*
Beroom 01	ALM-002-01 A	W03	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1480	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-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

* 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	5377	E	2198	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4975	W	3238	Yes
Laundry	HEBEL-100-REFL-CAV1	2740	350	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	27.7	2.00
INT-PB	Internal Plasterboard Stud Wall	30.0	0.00
INT-PB	Internal Plasterboard Stud Wall	18.5	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	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			

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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.
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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-2R2THB-01

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

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* 100.6	Open
Unconditioned* 4.8	NatHERS climate zone
Total 105.4	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.

6.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

44.0 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
24.7	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-2R2THB-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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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-002-03 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-002-03 A	W01	2700	2605	Sliding	45	N	None
Bedroom 02	ALM-002-03 A	W06	2700	1395	Sliding	45	E	None
Bedroom 03	ALM-002-03 A	W03	2700	1610	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*
Bedroom 03	ALM-002-03 A	W04	2700	1395	Sliding	45	E	None
Kitchen/Living	ALM-002-03 A	W02	2700	3895	Sliding	45	N	None
Study	ALM-002-03 A	W05	2700	845	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	0.50	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	2740	3598	N	3151	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	E		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	12	N		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	4255	N	3151	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3006	E		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	12	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4721	N	3151	No
Study	HEBEL-100-REFL-CAV1	2740	2328	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	139.8	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	4.8	N/A	0.00	Carpet
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	12.8	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	43.4	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	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	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
Bedroom 03	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
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
Study	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
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	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		

* 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	0.00	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-CCGSUP-01

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

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* 48.1	Open
Unconditioned* 4.3	NatHERS climate zone
Total 52.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

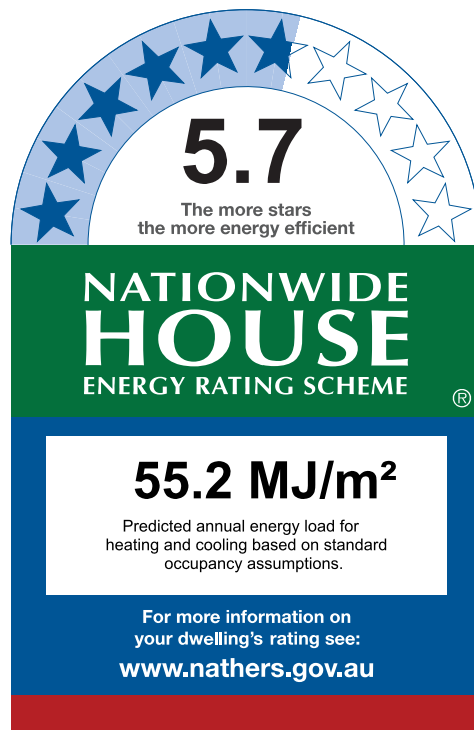
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
36.0	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-CCGSUP-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	W01	2700	1100	Sliding	45	E	None
Kitchen/Living	ALM-003-01 A	W03	2700	1505	Sliding	45	E	None
Kitchen/Living	ALM-003-01 A	W02	2700	3555	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	0.32	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	2178	E	4513	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	3599	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	4513	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	87.0	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	13.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.5	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	2.50	No
Bedroom 01	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
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	0.00	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).
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-94JKLL-01

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

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*	74.0 Open
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.

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

57.2 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
45.3	11.9
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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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	W04	2700	2900	Sliding	45	S	None
Bedroom 02	ALM-003-01 A	W03	2700	2390	Sliding	45	S	None
Kitchen/Living	ALM-003-01 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-003-01 A	W02	2700	1060	Sliding	45	S	None
Kitchen/Living	ALM-003-01 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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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	3598	S	1286	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3006	S	1286	Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	301	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	13	E		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	163	N		Yes
Entry	HEBEL-100-REFL-CAV1-A	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5588	S	2196	No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	910	E	5583	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2710	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4213	N		No
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	308	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	105.3	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	3.8	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

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.5	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	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
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

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	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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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-T9FDLX-01

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

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

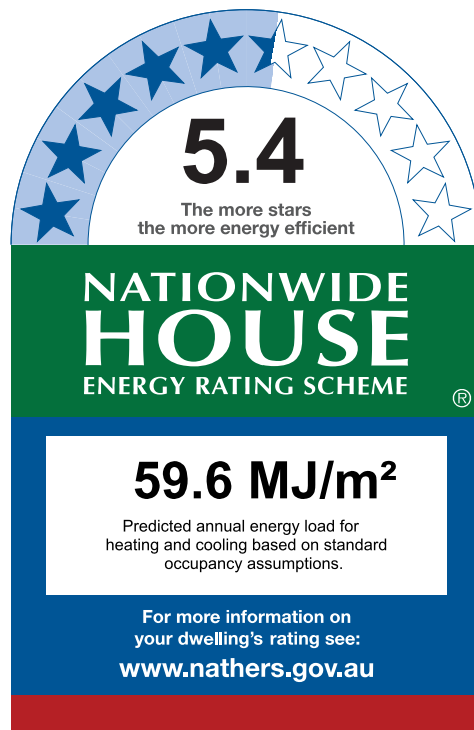
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
36.9	22.7
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-T9FDLX-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 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-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	1630	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	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-100-REFL-CAV1	2740	106	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3598	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1503	W	4040	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	S	2933	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	125	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	107	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	123.4	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	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	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
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No

* Refer to glossary.



Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Laundry	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	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
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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

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

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

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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

Glossary

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

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-FZZ2CE-01

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

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.

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

48.1 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
34.4	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-FZZ2CE-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	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-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	1715	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	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-100-REFL-CAV1	2740	1461	E	3994	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	S	2933	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	116.6	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	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	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
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	3	Downlight	200	Sealed

* Refer to glossary.



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	0.00	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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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-L41K3-01

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

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.

7.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

32.6 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
17.2	15.4
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-L41K3-01>. 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	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-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.32	Light (Surfmist)	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-PARTITION1	2740	1567	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-PARTITION1	2740	61	W		Yes
Bedroom 02	HEBEL-PARTITION1	2740	1374	W		Yes
Bedroom 02	HEBEL-PARTITION1	2740	3090	S		Yes
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	8.7	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	38.2	2.00
INT-PB	Internal Plasterboard Stud Wall	91.0	2.00
INT-PB	Internal Plasterboard Stud Wall	5.0	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	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*
Bedroom 02	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

* 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	0.00	0.50	Medium

* Refer to glossary.

Explanatory Notes

About this report

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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-IBVW9N-01

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

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

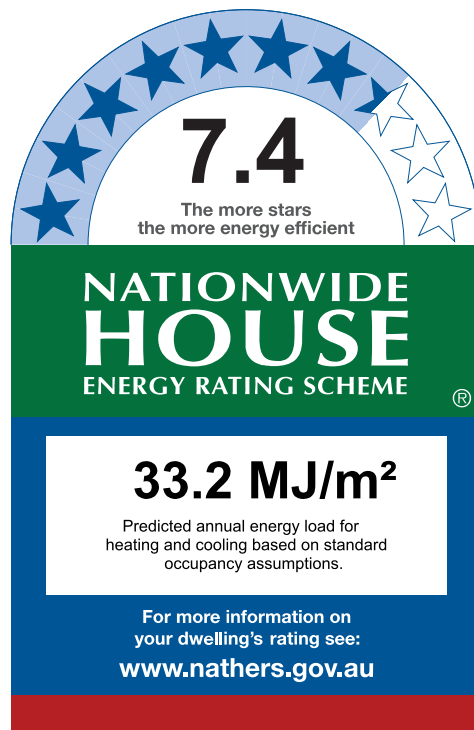
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
17.6	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-IBVW9N-01>. 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	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
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.32	Light (Surfmist)	2.00	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-PARTITION1	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-100-REFL-CAV1	2740	3069	N	3001	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes
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	24.3	2.00
INT-PB	Internal Plasterboard Stud Wall	31.7	0.00
INT-PB	Internal Plasterboard Stud Wall	15.9	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	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*
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
Laundry	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	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	0.00	0.50	Medium

* 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).

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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-AQ8G2B-01

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

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* 47.4	Open
Unconditioned* 3.8	NatHERS climate zone
Total 51.2	56 - Mascot AMO
Garage 0.0	



Accredited assessor

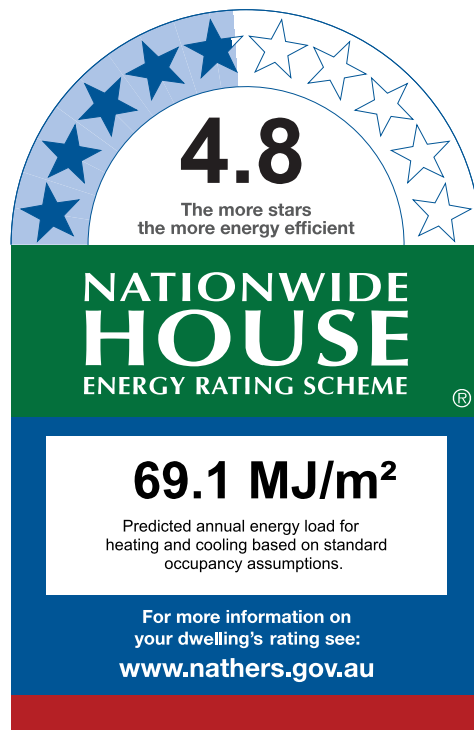
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
42.6	26.5
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-AQ8G2B-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*
Berom 01	ALM-002-01 A	W03	2700	1355	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1480	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-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
Berroom 01	HEBEL-100-REFL-CAV1-A	2740	2308	N	4387	Yes

* Refer to glossary.

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Entry	HEBEL-100-REFL-CAV1-B	2740	296	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	13	E		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	296	S		Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	12	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3598	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5377	E	2198	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	4975	W	3238	Yes
Laundry	HEBEL-100-REFL-CAV1-A	2740	350	E		Yes
Laundry	HEBEL-100-REFL-CAV1-B	2740	11	E		Yes
Laundry	HEBEL-100-REFL-CAV1-B	2740	12	E		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	27.7	2.00
INT-PB	Internal Plasterboard Stud Wall	30.0	0.00
INT-PB	Internal Plasterboard Stud Wall	18.3	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	3.8	N/A	0.00	Tile
Berom 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

* 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	2.50	No
Berom 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
Laundry	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
Berom 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

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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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.
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-QH2DPW-01

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

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* 48.4	Open
Unconditioned* 9.3	NatHERS climate zone
Total 57.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

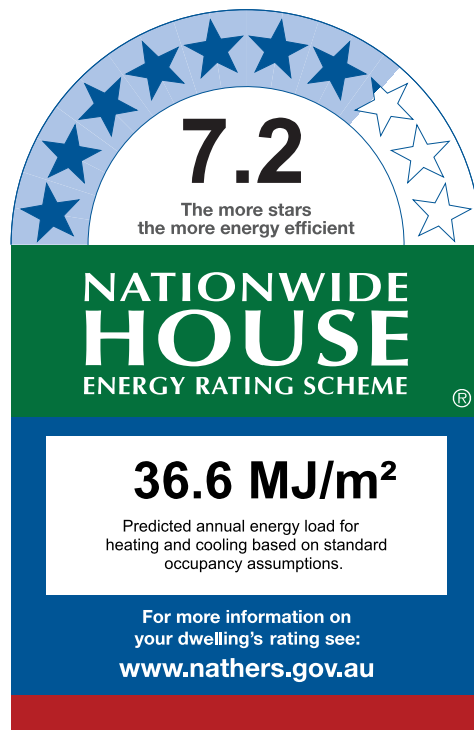
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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Thermal Performance

Heating	Cooling
18.2	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?

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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	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-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-B	2740	1567	E	13024	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	1778	W	3819	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-B	2740	4626	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3749	N	2353	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	2033	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	319	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	265	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	334	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	310	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	14.7	2.00
INT-PB	Internal Plasterboard Stud Wall	60.4	2.00
INT-PB	Internal Plasterboard Stud Wall	3.4	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	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	34.4	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	2.50	No
Bedroom 01	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
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	0.00	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.
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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).

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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-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

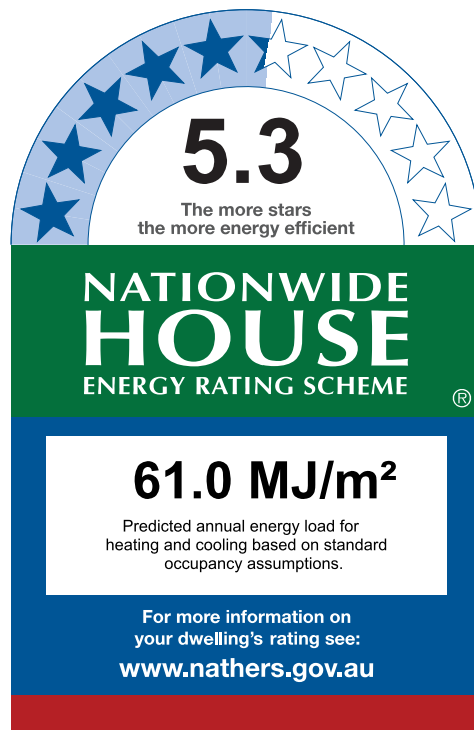
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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
35.0	26.0
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-IUOAYR-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	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			

* 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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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
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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

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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7.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

37.5 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
14.7	22.8
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-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			

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.

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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-1ETL37-01

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

Property

Address F0203, 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*	71.0	Suburban
Unconditioned*	4.6	NatHERS climate zone
Total	75.6	56 - Mascot AMO
Garage	0.0	



Accredited assessor

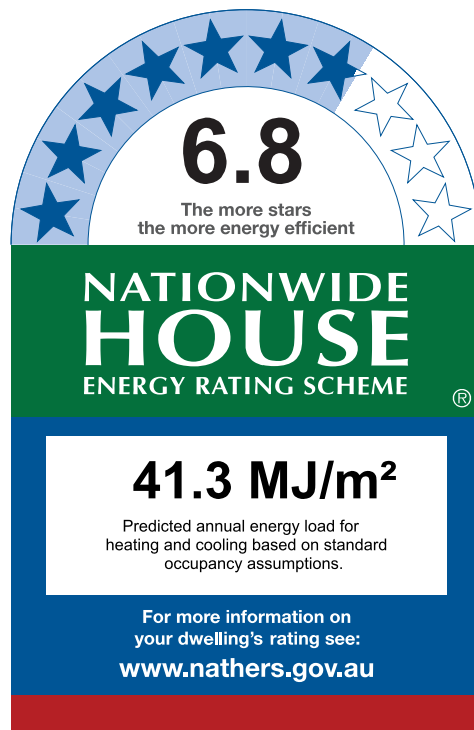
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
26.3	15.0
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-1ETL37-01>. 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	1145	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01	2700	1440	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3365	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	1693	S	1453	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1990	E	20628	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	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	N	2705	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1439	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	81.9	2.00
INT-PB	Internal Plasterboard Stud Wall	50.8	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	4.6	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	10.5	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	7.0	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

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	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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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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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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-D93410-01

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

Property

Address F0204, 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* 49.9	Suburban
Unconditioned* 4.9	NatHERS climate zone
Total 54.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

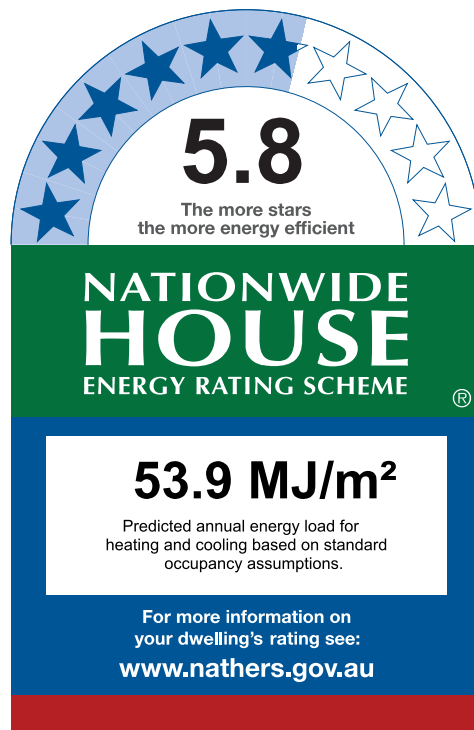
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
26.9	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

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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-002-04 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	W01	2700	1565	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W02	2700	4000	Sliding	66	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
Bathroom	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	360	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-100-REFL-CAV1	2740	1858	S	2641	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1381	S	2641	Yes
Entry	HEBEL-100-REFL-CAV1	2740	402	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2286	E	22320	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5208	S	2641	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	55.3	2.00
INT-PB	Internal Plasterboard Stud Wall	28.9	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	4.9	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.5	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
Entry	1	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
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.

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-QROVCG-01

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

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*	44.2	Suburban
Unconditioned*	5.7	NatHERS climate zone
Total	49.9	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.

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
20.8	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-QROVCG-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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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 '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-002-04 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	1060	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W06	2700	1440	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W05	2700	3345	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	2201	S	4281	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	S		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	4255	W	2747	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	136	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	106	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	21	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	84.6	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	5.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.8	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

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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-6YPWRB-01

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

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* 76.1	Suburban
Unconditioned* 3.8	NatHERS climate zone
Total 79.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

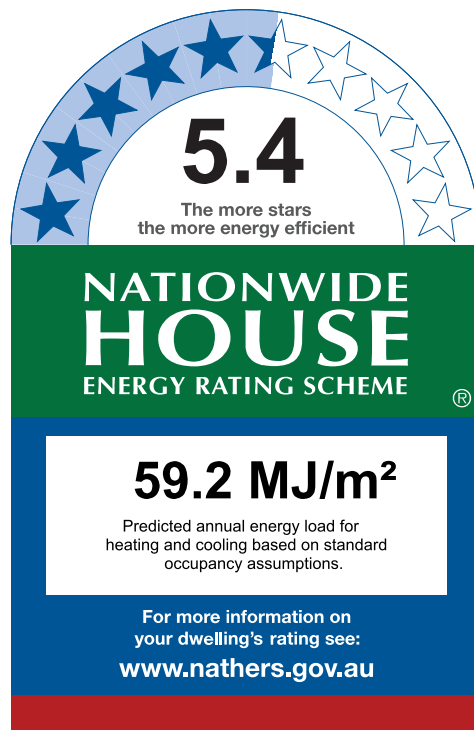
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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



Thermal Performance

Heating	Cooling
33.3	25.9
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-6YPWRB-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-002-04 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	2645	Sliding	45	S	None
Bedroom 02	ALM-002-04 A	W05	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W06	2700	1505	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-002-04 A	W07	2700	5335	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-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	3112	E		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3704	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	S		No
Ensuite	HEBEL-100-REFL-CAV1	2740	1058	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5504	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6012	W	2404	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	84	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	108.2	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	13.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	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 Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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
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 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.
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).

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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-VI147K-01

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

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.

5.2
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

62.8 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
33.7	29.1
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-VI147K-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.



Certificate Check

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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-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	W01	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 %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-04 A	W03	2700	3960	Sliding	66	N	None
Kitchen/Living	ALM-001-04 A	W02	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-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	868	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2307	W	3439	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1903	WNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4636	N	2267	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1207	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2074	WNW		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	1.2	2.00
INT-PB	Internal Plasterboard Stud Wall	83.0	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	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

* 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			

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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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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-1QPVXH-01

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

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*	44.9	Suburban
Unconditioned*	4.3	NatHERS climate zone
Total	49.2	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.

7.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

37.6 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
14.6	23.0
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-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	1395	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	1485	Sliding	45	WNW	None
Kitchen/Living	ALM-002-01 A	W02	2700	2055	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	2468	W	4307	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3976	WNW		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	3747	N	3784	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3112	S	2439	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	70.4	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	12.5	N/A	0.00	Carpet
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*
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		



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
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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

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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
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-01

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

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* 45.3	Suburban
Unconditioned* 4.4	NatHERS climate zone
Total 49.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

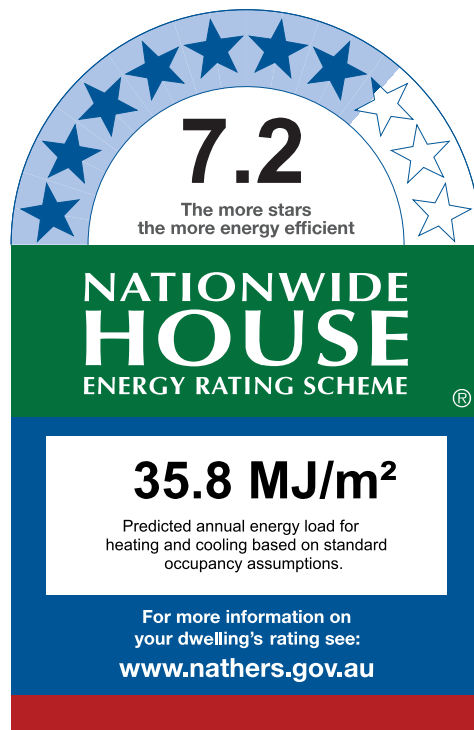
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
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Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
9.6	26.3
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-LPXJHT-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	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	2506	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	2140	ENE	3518	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	15.0	2.00
INT-PB	Internal Plasterboard Stud Wall	54.4	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
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			



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.

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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-0MKF9W-01

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

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* 71.0	Suburban
Unconditioned* 4.6	NatHERS climate zone
Total 75.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

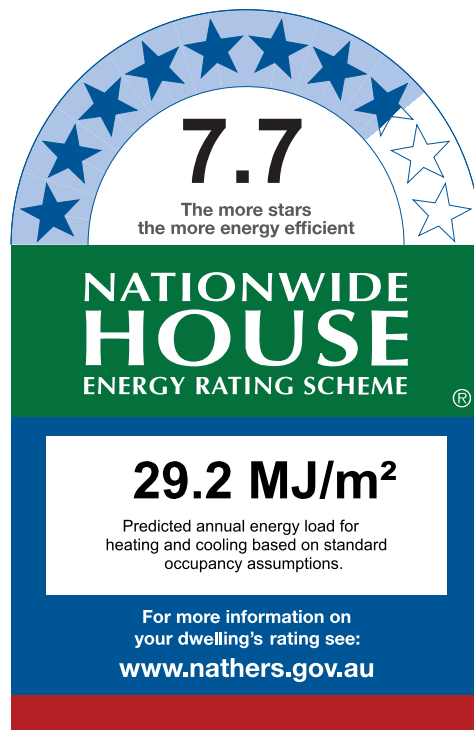
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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



Thermal Performance

Heating	Cooling
13.8	15.4
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?

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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	W03	2700	1145	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01	2700	1440	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3365	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	1693	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	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	4001	N	2705	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1439	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	40.1	2.00
INT-PB	Internal Plasterboard Stud Wall	50.8	0.00
INT-PB	Internal Plasterboard Stud Wall	47.4	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	4.6	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	10.5	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	7.0	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

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	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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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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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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-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

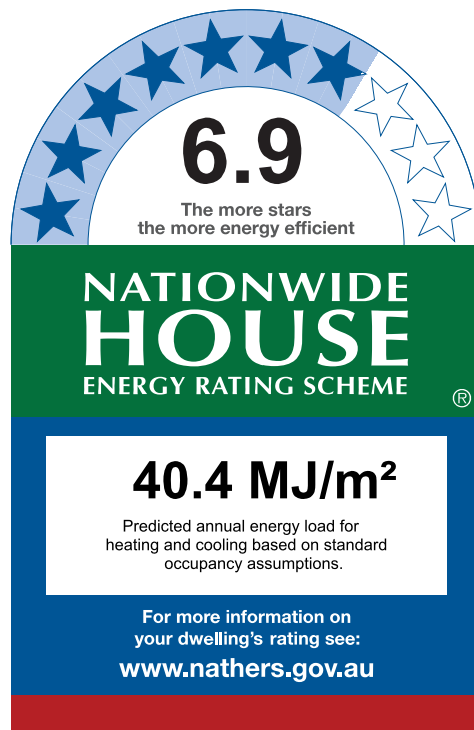
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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

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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

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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-PZJ46R-01

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

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*	44.2 Open
Unconditioned*	5.7 NatHERS climate zone
Total	49.9 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.

6.3
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

47.2 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
26.8	20.4
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-002-04 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	1060	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W06	2700	1440	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W05	2700	3345	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	2201	S	4281	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	S		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	4255	W	2747	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	136	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	106	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	21	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	84.6	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	5.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.8	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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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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-H30PK7-01

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

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* 76.1	Open
Unconditioned* 3.8	NatHERS climate zone
Total 79.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

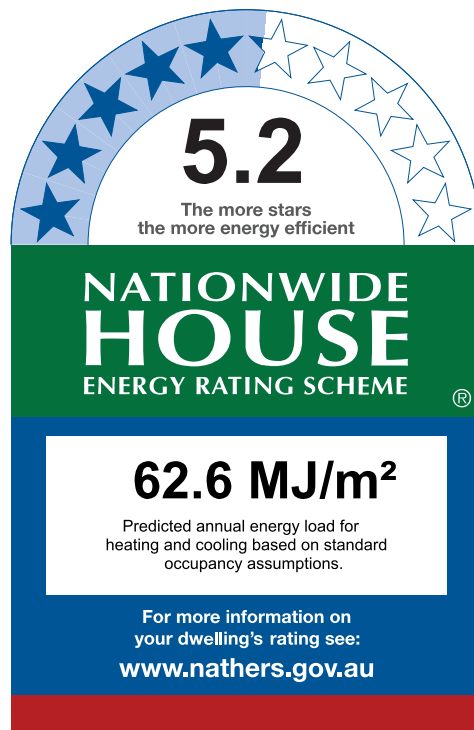
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
39.8	22.8
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-H30PK7-01>. 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-002-04 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	2645	Sliding	45	S	None
Bedroom 02	ALM-002-04 A	W05	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W06	2700	1505	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	W07	2700	5335	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-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	3112	E		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3704	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	S		No
Ensuite	HEBEL-100-REFL-CAV1	2740	1058	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5504	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6012	W	2404	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	84	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	108.2	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	13.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	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 Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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
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 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

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-FGCG8K-01

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

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 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.

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
40.6	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

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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-001-04 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	W01	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 %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-04 A	W03	2700	3960	Sliding	66	N	None
Kitchen/Living	ALM-001-04 A	W02	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-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	868	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2307	W	3439	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1903	WNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4636	N	2267	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1207	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2074	WNW		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	1.2	2.00
INT-PB	Internal Plasterboard Stud Wall	83.0	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	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

* 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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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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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-Q2KM1H-01

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

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*	44.9	Open
Unconditioned*	4.3	NatHERS climate zone
Total	49.2	56 - Mascot AMO
Garage	0.0	



Accredited assessor

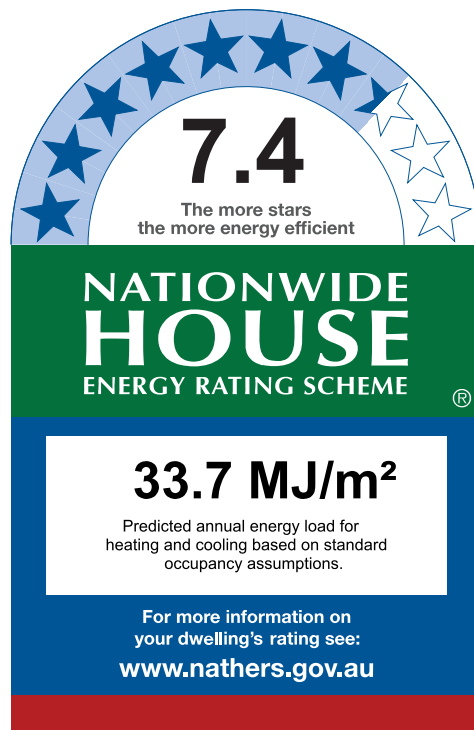
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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
18.9	14.9
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.

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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	1395	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	1485	Sliding	45	WNW	None
Kitchen/Living	ALM-002-01 A	W02	2700	2055	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	2468	W	4307	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3976	WNW		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	3747	N	3784	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3112	S	2439	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	70.4	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	12.5	N/A	0.00	Carpet
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*
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			

* 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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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.
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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

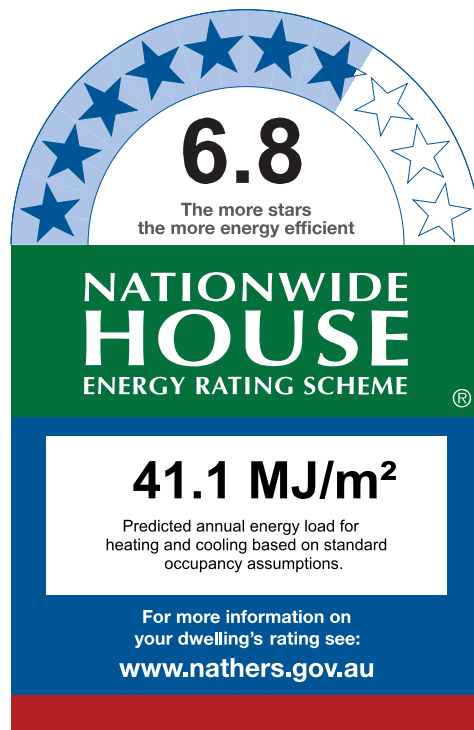
Declaration of interest No Conflict of Interest

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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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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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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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-EYHR4E-01

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

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* 45.3	Open
Unconditioned* 4.4	NatHERS climate zone
Total 49.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

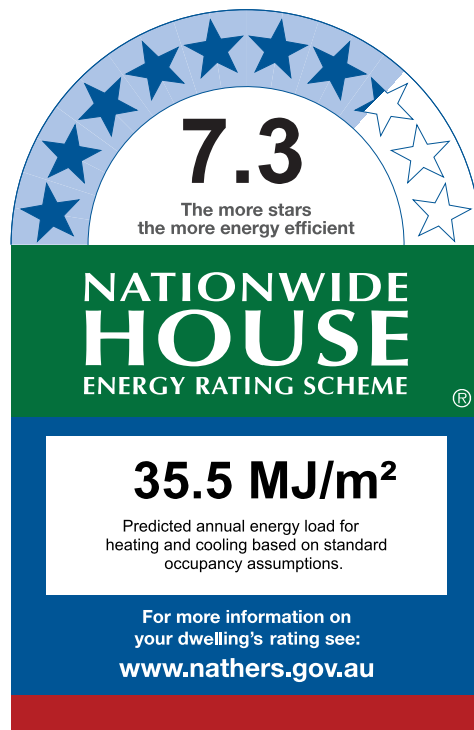
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
13.1	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-EYHR4E-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	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	2506	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	2140	ENE	3518	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	15.0	2.00
INT-PB	Internal Plasterboard Stud Wall	54.4	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
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			

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).

* Refer to glossary.

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-UXRM44-01

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

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* 71.0	Open
Unconditioned* 4.6	NatHERS climate zone
Total 75.6	56 - Mascot AMO
Garage 0.0	



Accredited assessor

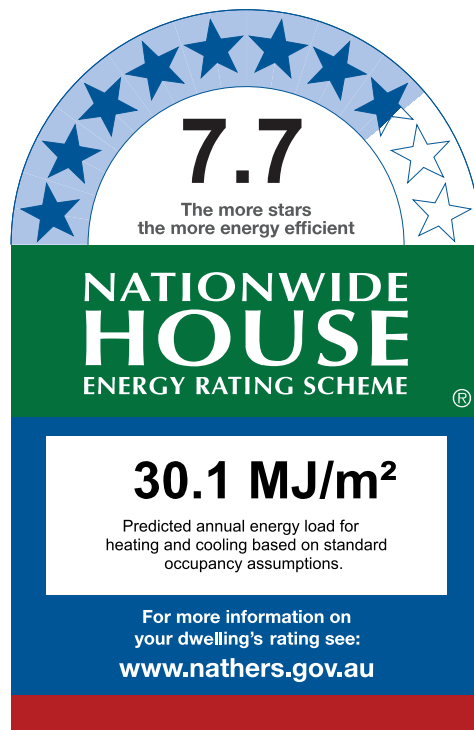
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
15.4	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-UXRM44-01>. 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	1145	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01	2700	1440	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3365	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	1693	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	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	4001	N	2705	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1439	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	40.1	2.00
INT-PB	Internal Plasterboard Stud Wall	50.8	0.00
INT-PB	Internal Plasterboard Stud Wall	47.4	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	4.6	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	10.5	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	7.0	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

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	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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

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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.

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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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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).

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-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			

* 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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-8CQUKL-01

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

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* 44.2	Open
Unconditioned* 5.7	NatHERS climate zone
Total 49.9	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.

6.3
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
27.6	20.0
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-8CQUKL-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-002-04 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	1060	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W06	2700	1440	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W05	2700	3345	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	2201	S	4281	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	S		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	4255	W	2747	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	136	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	106	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	21	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	84.6	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	5.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.8	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.
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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-16J4QD-01

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

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* 76.1	Open
Unconditioned* 3.8	NatHERS climate zone
Total 79.9	56 - Mascot AMO
Garage 0.0	



Accredited assessor

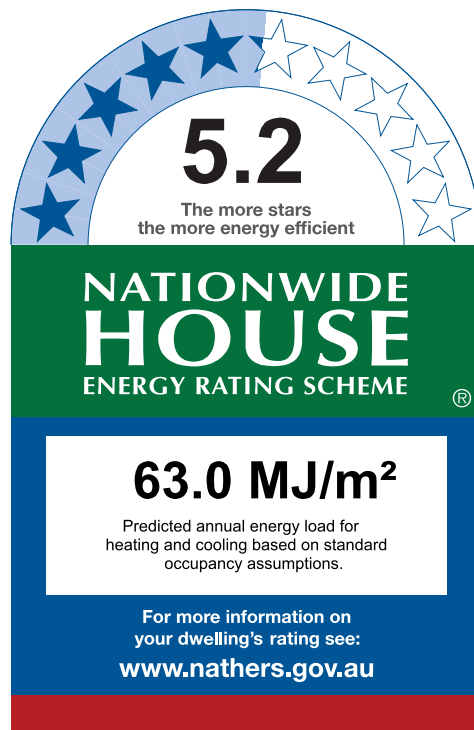
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
40.7	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-16J4QD-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-002-04 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	2645	Sliding	45	S	None
Bedroom 02	ALM-002-04 A	W05	2700	1505	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W06	2700	1505	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-002-04 A	W07	2700	5335	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-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	3112	E		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3704	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	S		No
Ensuite	HEBEL-100-REFL-CAV1	2740	1058	E		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5504	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6012	W	2404	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	84	E		No

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	108.2	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	13.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	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 Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.1	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
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 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

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.
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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-K1CJC7-01

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

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

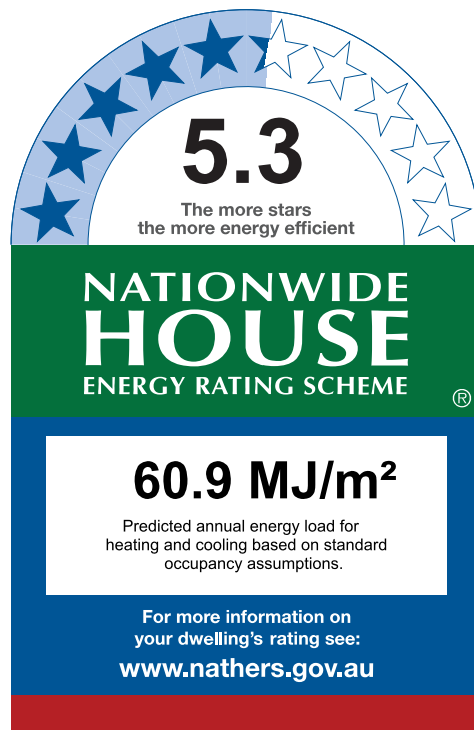
Name	Duncan Hope
Business name	Senica Consultancy Group
Email	duncan@senica.com.au
Phone	+61 280067784
Accreditation No.	DMN/14/1658
Assessor Accrediting Organisation	DMN
Declaration of interest	No Conflict of Interest

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.

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
41.5	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-K1CJC7-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-04 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	W01	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 %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-04 A	W03	2700	3960	Sliding	66	N	None
Kitchen/Living	ALM-001-04 A	W02	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-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	868	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2307	W	3439	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1903	WNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4636	N	2267	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1207	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2074	WNW		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	1.2	2.00
INT-PB	Internal Plasterboard Stud Wall	83.0	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	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

* 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

About this report

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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-OU12MS-01

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

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*	44.9	Open
Unconditioned*	4.3	NatHERS climate zone
Total	49.2	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

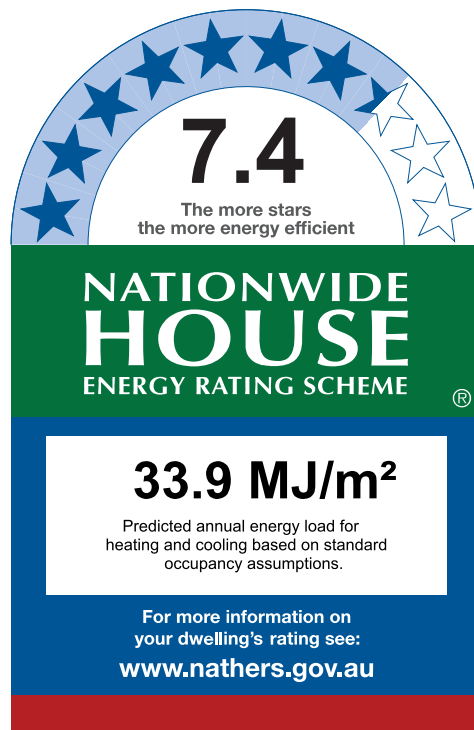
Declaration of interest No Conflict of Interest

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
19.5	14.5
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-OU12MS-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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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-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	1395	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01	2700	1485	Sliding	45	WNW	None
Kitchen/Living	ALM-002-01 A	W02	2700	2055	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	2468	W	4307	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3976	WNW		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	3747	N	3784	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3112	S	2439	Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	70.4	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	12.5	N/A	0.00	Carpet
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*
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			

* 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.
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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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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

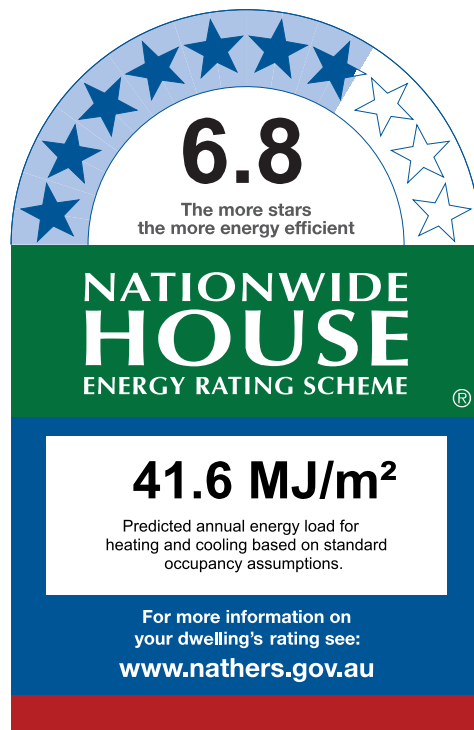
Declaration of interest No Conflict of Interest

National Construction Code (NCC) requirements

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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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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

About this report

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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-TCIROQ-01

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

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* 45.3	Open
Unconditioned* 4.4	NatHERS climate zone
Total 49.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

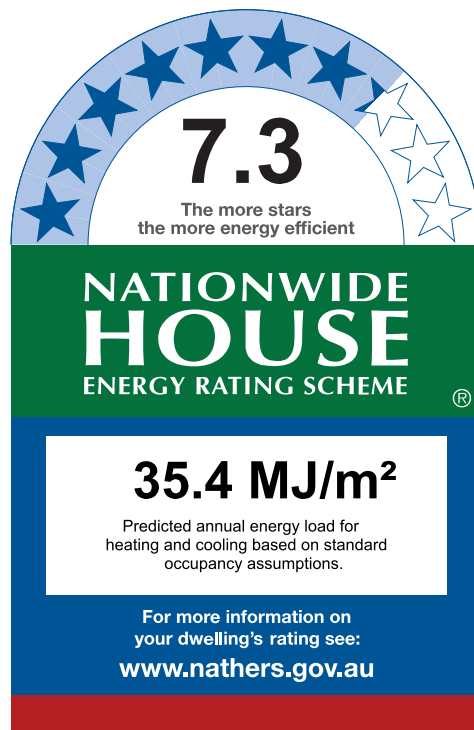
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
13.6	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-TCIROQ-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	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	2506	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	2140	ENE	3518	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	15.0	2.00
INT-PB	Internal Plasterboard Stud Wall	54.4	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
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			

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

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

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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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).
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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-S18PDQ-01

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

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* 71.0	Open
Unconditioned* 4.6	NatHERS climate zone
Total 75.6	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.

7.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

30.2 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
16.0	14.2
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-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	1440	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3365	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	1693	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	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	4001	N	2705	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1439	W		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	40.1	2.00
INT-PB	Internal Plasterboard Stud Wall	50.8	0.00
INT-PB	Internal Plasterboard Stud Wall	47.4	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	4.6	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	10.5	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	7.0	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

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	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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

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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-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.

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
26.2	15.9
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-HPPAAR-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

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

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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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Shading features	includes neighbouring buildings, fences, and wing walls, 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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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-ENGFEN-01

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

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* 91.5	Open
Unconditioned* 3.9	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.

5.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

64.0 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
43.2	20.8
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-ENGFEN-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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
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-002-03 A	W05	2700	2415	Sliding	45	S	None
Bedroom 02	ALM-002-03 A	W04	2700	2605	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-002-03 A	W03	2700	1440	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W02	2700	3135	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W01	2700	5270	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-100-REFL-CAV1	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	2740	3104	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2963	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2246	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2900	S		No
Ensuite	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6308	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5928	W	3060	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	64.6	2.00
INT-PB	Internal Plasterboard Stud Wall	71.8	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	3.9	N/A	0.00	Tile
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	12.0	N/A	0.00	Carpet
Bedroom 03	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	3.8	N/A	0.00	Tile
Entry Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.4	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
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
Entry 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

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.

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-JNPK0A-01

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

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*	51.5	Open
Unconditioned*	3.9	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.

5.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

55.2 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
39.5	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-JNPK0A-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



* Refer to glossary.

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Window and glazed door type and performance

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-04 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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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	462	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	2307	W	3845	Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5025	N	2276	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1207	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3977	WNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	656	S		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	22.7	2.00
INT-PB	Internal Plasterboard Stud Wall	69.3	2.00
INT-PB	Internal Plasterboard Stud Wall	1.2	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.2	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Carpet

* 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
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	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.

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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.
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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-JFXOD6-01

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

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*	49.7	Open
Unconditioned*	4.8	NatHERS climate zone
Total	54.5	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

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
23.3	9.6
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-JFXOD6-01>. 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-002-04 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	W03	2700	1460	Sliding	45	WNW	None
Kitchen/Living	ALM-002-04 A	W01	2700	2225	Sliding	45	W	None
Kitchen/Living	ALM-002-04 A	W02	2700	1400	Sliding	45	WNW	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	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2530	NNW		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	21	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	3125	WNW	3969	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3870	NNW		Yes
Entry	HEBEL-100-REFL-CAV1	2740	317	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	296	E		Yes
Entry	HEBEL-100-REFL-CAV1	2740	13	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	167	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2308	W	4307	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1207	N	7834	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1997	WNW	3976	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	42	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	321	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	324	S		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	15.2	2.00
INT-PB	Internal Plasterboard Stud Wall	58.4	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	4.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	27.0	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
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
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).

* Refer to glossary.

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

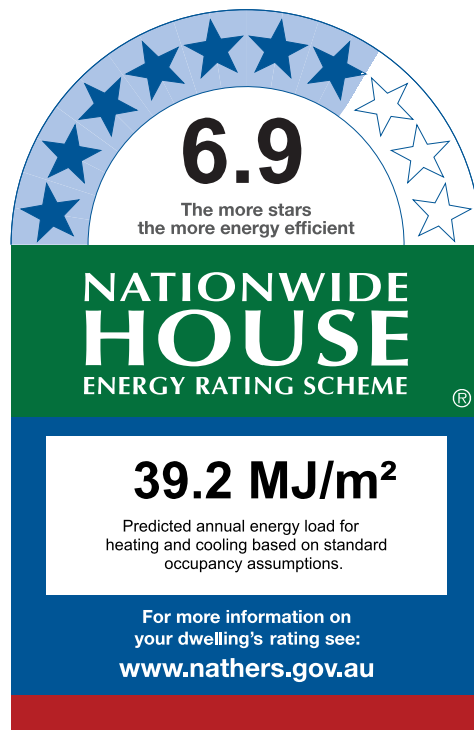
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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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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-K114SL-01

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

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* 71.0	Open
Unconditioned* 4.6	NatHERS climate zone
Total 75.6	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.

7.6
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

30.5 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
16.1	14.5
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-K114SL-01>. 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	1145	Sliding	45	S	None
Bedroom 02	ALM-002-01 A	W01	2700	1440	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3365	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
HEBEL-PARTITION1	HEBEL-PARTITION1: Hebel Panel Partition wall with Acoustic Insulation	0.50	Medium	2.00	No

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	1693	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-100-REFL-CAV1	2740	3006	N		Yes
Entry	HEBEL-PARTITION1	2740	62	S		Yes
Entry	HEBEL-PARTITION1	2740	85	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	N	2705	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1439	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	4.4	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	40.1	2.00
INT-PB	Internal Plasterboard Stud Wall	50.8	0.00
INT-PB	Internal Plasterboard Stud Wall	42.4	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	4.6	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	10.5	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	7.0	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

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
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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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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-I4E49G-01

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

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* 81.5	Open
Unconditioned* 4.2	NatHERS climate zone
Total 85.7	56 - Mascot AMO
Garage 0.0	



Accredited assessor

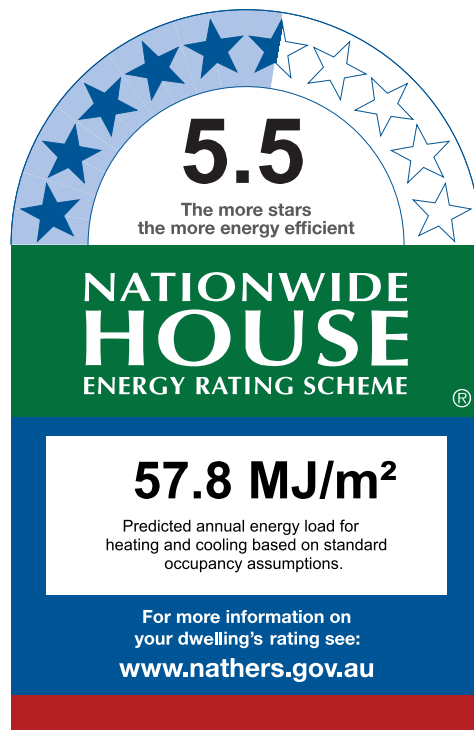
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
38.3	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-I4E49G-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-002-03 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-002-03 A	W03	2700	2604	Sliding	45	S	None
Bedroom 02	ALM-002-03 A	W02	2700	2858	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W06	2700	2525	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-002-03 A	W01	2700	2605	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-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

* 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	359	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	339	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	2942	S	2189	Yes
Bedroom 02	HEBEL-100-REFL-CAV1-A	2740	3006	S	2189	Yes
Hallway	HEBEL-100-REFL-CAV1-A	2740	33	W		Yes
Hallway	HEBEL-100-REFL-CAV1-A	2740	32	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	3947	S	2180	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	203	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	84	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	111	W		No
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	33	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	32	E		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	2731	E		Yes
Study	HEBEL-100-REFL-CAV1-A	2740	2964	S	2189	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	36.2	2.00
INT-PB	Internal Plasterboard Stud Wall	104.5	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	4.2	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	11.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	N/A	0.00	Tile

* Refer to glossary.



Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	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	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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-QQIXDO-01

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

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*	91.5	Open
Unconditioned*	3.9	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.

5.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

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

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

Thermal Performance

Heating	Cooling
44.0	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

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-QQIXDO-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-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
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-002-03 A	W05	2700	2415	Sliding	45	S	None
Bedroom 02	ALM-002-03 A	W04	2700	2605	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-002-03 A	W03	2700	1440	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W02	2700	3135	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W01	2700	5270	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-100-REFL-CAV1	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	2740	3104	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2963	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2246	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2900	S		No
Ensuite	HEBEL-100-REFL-CAV1	2740	110	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	296	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	27	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	27	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6308	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5928	W	3060	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	59.0	2.00
INT-PB	Internal Plasterboard Stud Wall	76.8	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	3.9	N/A	0.00	Tile
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	12.0	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	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	3.8	N/A	0.00	Tile
Entry Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.4	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
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
Entry 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 absorbptance	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-IDGTZG-01

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

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*	51.5	Open
Unconditioned*	3.9	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.

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5.7
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

55.3 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
40.2	15.1
MJ/m ²	MJ/m ²

About the rating

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Verification

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

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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-100-REFL-CAV1-A	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.32	Light (Surfmist)	2.00	Yes

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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	462	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	2307	W	3845	Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5025	N	2276	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1207	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3977	WNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	656	S		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	22.7	2.00
INT-PB	Internal Plasterboard Stud Wall	69.3	2.00
INT-PB	Internal Plasterboard Stud Wall	1.2	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.2	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	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
Entry	1	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.

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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-EE0UAN-01

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

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*	49.7	Open
Unconditioned*	4.8	NatHERS climate zone
Total	54.5	56 - Mascot AMO
Garage	0.0	



Accredited assessor

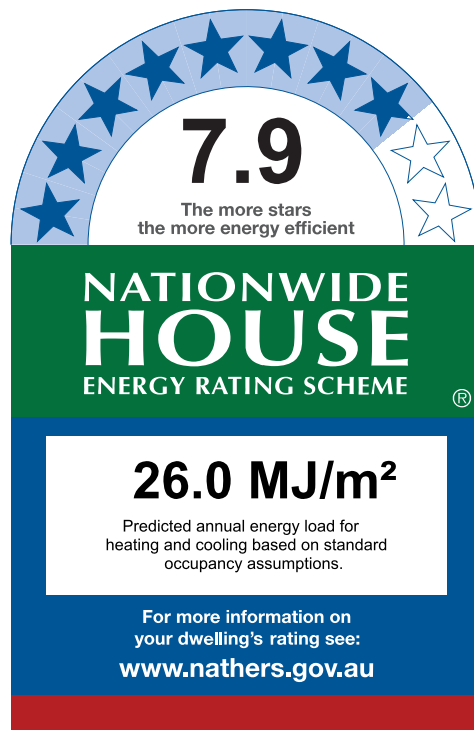
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
12.8	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-EE0UAN-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-002-04 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	W03	2700	1460	Sliding	45	WNW	None
Kitchen/Living	ALM-002-04 A	W01	2700	2225	Sliding	45	W	None
Kitchen/Living	ALM-002-04 A	W02	2700	1400	Sliding	45	WNW	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	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2530	NNW		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	21	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	3125	WNW		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3870	NNW		Yes
Entry	HEBEL-100-REFL-CAV1	2740	317	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	296	E		Yes
Entry	HEBEL-100-REFL-CAV1	2740	13	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	167	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2308	W	4307	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1207	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1997	WNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	42	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	321	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	324	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	16	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	15	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	15	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	14	E		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	10.6	2.00
INT-PB	Internal Plasterboard Stud Wall	62.6	2.00

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	27.0	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	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			

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.
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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-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

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.

7.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

37.0 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
14.8	22.2
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	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

About this report

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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).

Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-J9BC49-01

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

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*	112.7 Open
Unconditioned*	6.7 NatHERS climate zone
Total	119.4 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.

6.8
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

41.1 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
29.9	11.2
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-J9BC49-01>. 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-002-04 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	W01	2700	2980	Sliding	45	ESE	None
Bedroom 02	ALM-002-04 A	W05	2700	2835	Sliding	45	E	None
Bedroom 03	ALM-002-04 A	W06	2700	845	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-002-04 A	W03	2700	2670	Sliding	45	ESE	None
Kitchen/Living	ALM-002-04 A	W04	2700	2900	Sliding	45	N	None
Kitchen/Living	ALM-002-04 A	W02	2700	680	Sliding	45	ESE	None

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
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	0.50	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	2740	3570	ESE	428	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3980	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3196	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3790	E	1870	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	4226	NNW		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1354	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2725	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3162	ESE	479	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3669	N	3910	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1365	ESE	479	Yes
Pantry	HEBEL-100-REFL-CAV1	2740	677	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	3006	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	135.7	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	6.7	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	12.1	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	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	5.1	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.6	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	10.0	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
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	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 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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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-CB4R06-01

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

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* 97.8	Open
Unconditioned* 4.0	NatHERS climate zone
Total 101.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

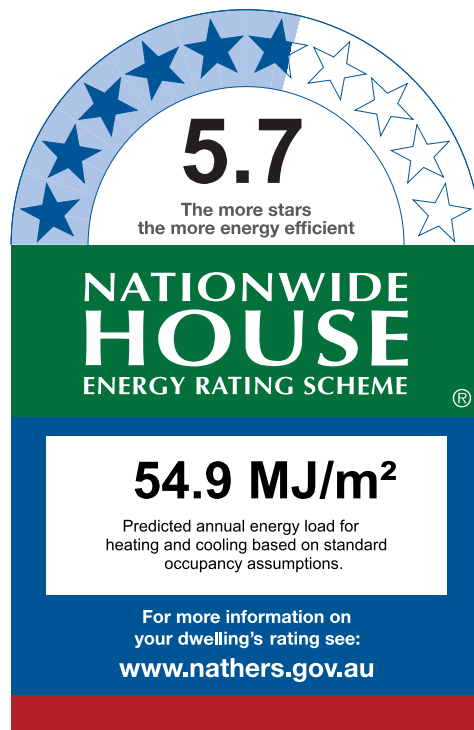
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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



Thermal Performance

Heating	Cooling
37.6	17.2
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?

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	W01	2700	2530	Sliding	45	S	None
Bedroom 02	ALM-002-04 A	W02	2700	2490	Sliding	45	S	None
Bedroom 03	ALM-002-04 A	W03	2700	2350	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-002-04 A	W06	2700	1165	Sliding	45	E	None
Kitchen/Living	ALM-002-04 A	W07	2700	2730	Sliding	45	E	None
Kitchen/Living	ALM-002-04 A	W04	2700	445	Sliding	45	S	None
Kitchen/Living	ALM-002-04 A	W05	2700	2540	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 (Ref 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	2740	3302	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2985	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5504	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1291	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2964	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	141.5	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	16.7	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	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	5.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.3	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
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
Entry	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			

* 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-4DG1VZ-01

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

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* 91.5	Open
Unconditioned* 3.9	NatHERS climate zone
Total 95.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

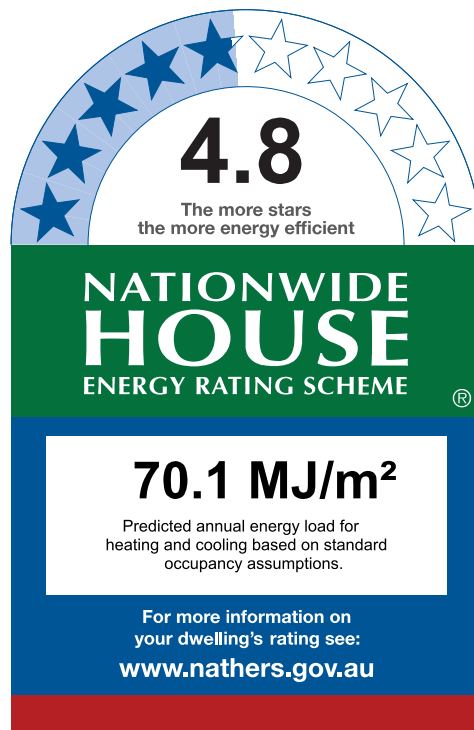
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.



Thermal Performance

Heating	Cooling
42.6	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-4DG1VZ-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-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	2700	2415	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W04	2700	2605	Sliding	45	S	None
Bedroom 03	ALM-004-01 A	W03	2700	1440	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	3135	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W01	2700	5270	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-100-REFL-CAV1	HEBEL-100-REFL-CAV1: Hebel Panel (100mm) 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-100-REFL-CAV1	2740	3104	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2963	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2246	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2900	S		No
Ensuite	HEBEL-100-REFL-CAV1	2740	110	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	296	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	27	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	27	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6308	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5928	W	2258	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	59.0	2.00
INT-PB	Internal Plasterboard Stud Wall	76.8	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	3.9	N/A	0.00	Tile
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	12.0	N/A	0.00	Carpet
Bedroom 03	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	3.8	N/A	0.00	Tile
Entry Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.4	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	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
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Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Entry 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
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry 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	0.00	0.50	Medium

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Explanatory Notes

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-NNPVN1-01

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

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*	51.5	Open
Unconditioned*	3.9	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

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5.1
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

64.9 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
44.0	20.9
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?

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-002-03 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-002-03 A	W04	2700	1165	Sliding	45	W	None
Kitchen/Living	ALM-002-03 A	W03	2700	3960	Sliding	66	N	None
Kitchen/Living	ALM-002-03 A	W02	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-002-03 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)	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

* 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	462	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	2307	W	3845	Yes
Entry	HEBEL-100-REFL-CAV1-B	2740	317	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	5025	N	2276	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	1207	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3977	WNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-B	2740	656	S		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	22.7	2.00
INT-PB	Internal Plasterboard Stud Wall	69.3	2.00
INT-PB	Internal Plasterboard Stud Wall	1.2	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	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.2	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	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
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	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	2.50	No
Study	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
Entry	1	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
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	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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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.
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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).

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-RLSL30-01

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

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* 49.7	Open
Unconditioned* 4.8	NatHERS climate zone
Total 54.5	56 - Mascot AMO
Garage 0.0	



Accredited assessor

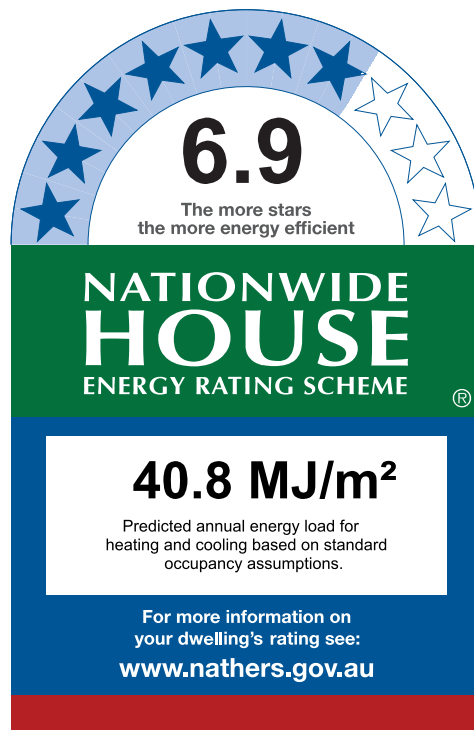
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
25.9	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-RLSL30-01>. 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-002-04 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	W03	2700	1460	Sliding	45	WNW	None
Kitchen/Living	ALM-002-04 A	W01	2700	2225	Sliding	45	W	None
Kitchen/Living	ALM-002-04 A	W02	2700	1400	Sliding	45	WNW	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	0.50	Medium	2.00	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2530	NNW		Yes
Bathroom	HEBEL-100-REFL-CAV1	2740	21	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	3125	WNW		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3870	NNW		Yes
Entry	HEBEL-100-REFL-CAV1	2740	317	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	296	E		Yes
Entry	HEBEL-100-REFL-CAV1	2740	13	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	167	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	11	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2308	W	4307	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1207	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1997	WNW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	42	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	321	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	324	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	16	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	15	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	15	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	14	E		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	10.6	2.00
INT-PB	Internal Plasterboard Stud Wall	62.6	2.00

* Refer to glossary.

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.5	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	27.0	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	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

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

* 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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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.

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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-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.

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
27.3	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-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.

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	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

* 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).

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-A2Y7GA-01

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

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* 112.7	Open
Unconditioned* 6.7	NatHERS climate zone
Total 119.4	56 - Mascot AMO
Garage 0.0	



Accredited assessor

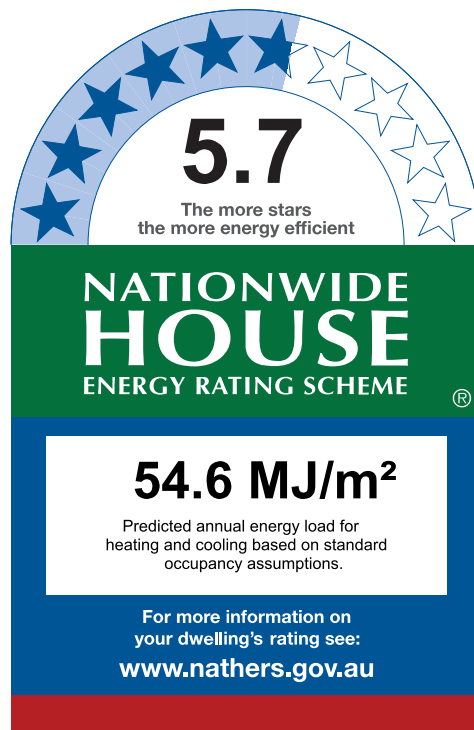
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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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Thermal Performance

Heating	Cooling
41.6	13.0
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?

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	W01	2700	2980	Sliding	45	ESE	None
Bedroom 02	ALM-002-04 A	W05	2700	2835	Sliding	45	E	None
Bedroom 03	ALM-002-04 A	W06	2700	845	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-002-04 A	W03	2700	2670	Sliding	45	ESE	None
Kitchen/Living	ALM-002-04 A	W04	2700	2900	Sliding	45	N	None
Kitchen/Living	ALM-002-04 A	W02	2700	680	Sliding	45	ESE	None

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

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

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
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	0.50	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	2740	3570	ESE	428	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3980	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3196	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3790	E	1870	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	4226	NNW		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1354	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2725	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3162	ESE	479	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3669	N	3910	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1365	ESE	479	Yes
Pantry	HEBEL-100-REFL-CAV1	2740	677	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	3006	N		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	135.7	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	6.7	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	12.1	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	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	5.1	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.6	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	10.0	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	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
Bedroom 03	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
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
Pantry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
Study	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
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed

* Refer to glossary.



Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Ensuite	1	Exhaust Fan	350	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 absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium

* Refer to glossary.

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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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-CL3R00-01

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

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* 97.8	Open
Unconditioned* 4.0	NatHERS climate zone
Total 101.8	56 - Mascot AMO
Garage 0.0	



Accredited assessor

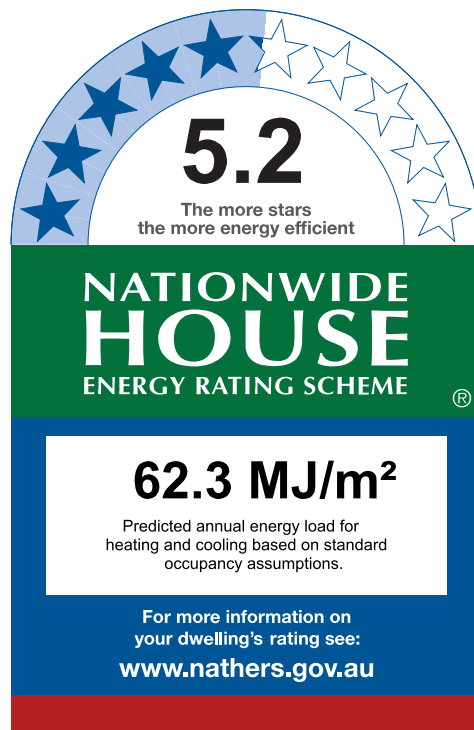
Name Duncan Hope
Business name Senica Consultancy Group
Email duncan@senica.com.au
Phone +61 280067784
Accreditation No. DMN/14/1658
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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
38.3	24.0
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-CL3R00-01>. 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-002-03 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-002-03 A	W01	2700	2530	Sliding	45	S	None
Bedroom 02	ALM-002-03 A	W02	2700	2490	Sliding	45	S	None
Bedroom 03	ALM-002-03 A	W03	2700	2350	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-002-03 A	W06	2700	1165	Sliding	45	E	None
Kitchen/Living	ALM-002-03 A	W07	2700	2730	Sliding	45	E	None
Kitchen/Living	ALM-002-03 A	W04	2700	445	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W05	2700	2540	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 (Ref 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	2740	3302	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2985	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5504	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1291	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2964	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	S		Yes

Internal wall type

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	141.5	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	16.7	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	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	5.2	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	41.3	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	2.50	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.50	No
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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
Bedroom 03	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	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
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