

# Nationwide House Energy Rating Scheme — Class 2 Summary

## NatHERS Certificate No. #HR-9ZAKAY-01

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### Property

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

**Lot/DP**

**NatHERS climate zone** 56 - Mascot AMO

### Accredited assessor



Duncan Hope

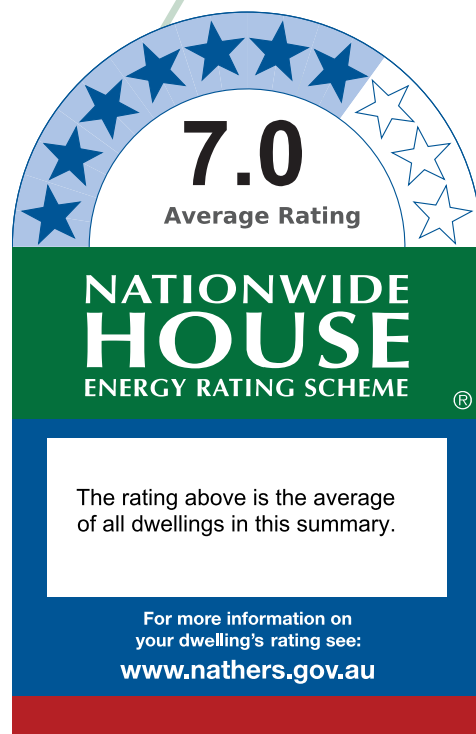
Senica Consultancy Group

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+61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN



### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-9ZAKAY-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>

### Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m <sup>2</sup> )	Cooling load (MJ/m <sup>2</sup> )	Total load (MJ/m <sup>2</sup> )	Star rating
<a href="#">HR-CU49C0-01</a>	G.15	21.8	17.3	39.1	6.9
<a href="#">HR-JADG6Z-01</a>	G.16	44.3	17.9	62.2	5.2
<a href="#">HR-BVQRUP-01</a>	G.17	24.0	25.5	49.5	6.1
<a href="#">HR-Y3P824-01</a>	G.18	43.6	9.0	52.6	5.9

### National Construction Code (NCC) requirements

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

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

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



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<a href="#">HR-JNOEX2-01</a>	G.19	14.0	28.7	42.8	6.7
<a href="#">HR-MVSU5Z-01</a>	G.20	14.6	24.1	38.7	7.0
<a href="#">HR-UNFN0H-01</a>	G.21	12.8	11.9	24.8	8.1
<a href="#">HR-9SCEOS-01</a>	G01	28.4	14.6	43.0	6.7
<a href="#">HR-5S88WD-01</a>	G02	34.8	17.7	52.5	5.9
<a href="#">HR-QPZZE4-01</a>	G03	32.8	22.7	55.5	5.7
<a href="#">HR-TX7X0D-01</a>	G04	23.6	9.7	33.3	7.4
<a href="#">HR-K9BD7P-01</a>	G05	2.4	23.3	25.7	8.0
<a href="#">HR-VXT4WQ-01</a>	G06	44.6	16.6	61.3	5.3
<a href="#">HR-10HD50-01</a>	G07	33.5	11.1	44.6	6.5
<a href="#">HR-ML7PRN-01</a>	G08	19.5	18.7	38.1	7.1
<a href="#">HR-T20P2W-01</a>	G09	20.9	12.7	33.6	7.4
<a href="#">HR-2QGD0P-01</a>	G10	18.9	25.3	44.2	6.6
<a href="#">HR-H0W4VG-01</a>	G11	17.1	21.1	38.2	7.1
<a href="#">HR-YMNNFM-01</a>	G12	18.5	17.1	35.5	7.2
<a href="#">HR-N1W69I-01</a>	G13	7.8	10.6	18.5	8.6
<a href="#">HR-WB7XNP-01</a>	G14	0.6	14.2	14.8	8.9
<a href="#">HR-3GM7NU-01</a>	101	25.3	11.2	36.5	7.2
<a href="#">HR-ZETLNA-01</a>	102	12.2	17.4	29.7	7.7
<a href="#">HR-SWKMZV-01</a>	103	13.2	19.1	32.3	7.4
<a href="#">HR-CI1JSP-01</a>	104	15.2	13.5	28.7	7.8
<a href="#">HR-I3KDTF-01</a>	105	16.2	18.9	35.1	7.3
<a href="#">HR-1Q19QS-01</a>	106	20.0	14.5	34.6	7.3
<a href="#">HR-RCEKKT-01</a>	107	26.0	14.9	40.9	6.8
<a href="#">HR-RRE4JY-01</a>	108	42.9	15.9	58.8	5.4
<a href="#">HR-IYB1LM-01</a>	109	15.2	17.3	32.5	7.4
<a href="#">HR-8NKAHF-01</a>	110	25.7	18.4	44.2	6.6
<a href="#">HR-S77DPF-01</a>	111	22.9	13.7	36.6	7.2
<a href="#">HR-ZZZ93H-01</a>	112	35.5	21.4	56.9	5.6



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<a href="#">HR-KIY1RE-01</a>	113	33.0	14.5	47.5	6.3
<a href="#">HR-OAQZ57-01</a>	114	18.3	14.2	32.5	7.4
<a href="#">HR-C995J1-01</a>	115	20.8	9.5	30.3	7.6
<a href="#">HR-CLW60P-01</a>	116	1.3	21.7	23.0	8.2
<a href="#">HR-44YCPI-01</a>	117	40.5	18.1	58.5	5.4
<a href="#">HR-WOA7YP-01</a>	118	20.1	12.2	32.3	7.4
<a href="#">HR-1HL5H8-01</a>	119	33.6	27.2	60.8	5.3
<a href="#">HR-FI6HBR-01</a>	120	44.5	14.3	58.9	5.4
<a href="#">HR-6HLIHY-01</a>	121	43.5	19.5	62.9	5.2
<a href="#">HR-5I8SOH-01</a>	122	35.8	20.2	55.9	5.6
<a href="#">HR-N55ZYU-01</a>	123	43.8	13.6	57.4	5.5
<a href="#">HR-NOGXF3-01</a>	124	6.4	10.9	17.3	8.7
<a href="#">HR-EDYDZX-01</a>	125	0.2	14.5	14.7	8.9
<a href="#">HR-7KSKHR-01</a>	126	14.9	16.1	31.0	7.6
<a href="#">HR-0KVIRM-01</a>	127	28.2	19.9	48.0	6.2
<a href="#">HR-GMC0NS-01</a>	128	25.9	17.0	42.9	6.7
<a href="#">HR-Z16PY5-01</a>	129	30.2	22.3	52.6	5.9
<a href="#">HR-MC5JGX-01</a>	130	41.3	14.2	55.5	5.7
<a href="#">HR-IZTBAB-01</a>	131	26.9	19.7	46.6	6.4
<a href="#">HR-OSCMNP-01</a>	132	34.9	19.3	54.2	5.8
<a href="#">HR-KZ2EA6-01</a>	133	37.0	11.9	48.9	6.2
<a href="#">HR-4P0MBD-01</a>	134	18.1	10.7	28.8	7.8
<a href="#">HR-PENWU9-01</a>	135	20.9	22.4	43.4	6.6
<a href="#">HR-P7IB1E-01</a>	136	24.5	26.4	50.9	6.0
<a href="#">HR-BG23O9-01</a>	137	6.8	15.8	22.6	8.3
<a href="#">HR-FDXDKJ-01</a>	138	15.1	26.8	41.9	6.8
<a href="#">HR-KAKWIP-01</a>	139	33.0	26.2	59.2	5.4
<a href="#">HR-OCNC6J-01</a>	201	15.6	11.5	27.2	7.9
<a href="#">HR-0M909J-01</a>	202	9.0	17.5	26.5	7.9



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<a href="#">HR-2OXSPX-01</a>	203	7.6	20.1	27.7	7.9
<a href="#">HR-81GBTP-01</a>	204	7.3	14.0	21.4	8.4
<a href="#">HR-EPM1N1-01</a>	205	7.8	21.2	29.0	7.8
<a href="#">HR-1Z1Z0D-01</a>	206	9.4	18.0	27.4	7.9
<a href="#">HR-T9NKZZ-01</a>	207	8.1	22.3	30.5	7.6
<a href="#">HR-TDCKAL-01</a>	208	16.3	16.7	33.0	7.4
<a href="#">HR-QEXH8P-01</a>	209	35.6	18.7	54.3	5.8
<a href="#">HR-4APJT0-01</a>	210	11.1	18.1	29.1	7.7
<a href="#">HR-CTV8A8-01</a>	211	26.7	12.3	39.0	7.0
<a href="#">HR-E8QL0E-01</a>	212	27.2	17.6	44.9	6.5
<a href="#">HR-2LC8C8-01</a>	213	14.1	15.0	29.1	7.7
<a href="#">HR-JECWQ8-01</a>	214	17.8	21.2	39.0	7.0
<a href="#">HR-MNKVNC-01</a>	215	29.3	16.6	46.0	6.4
<a href="#">HR-SBY7AJ-01</a>	216	9.6	16.0	25.6	8.0
<a href="#">HR-39O2D1-01</a>	217	19.1	9.4	28.5	7.8
<a href="#">HR-CA0EDG-01</a>	218	10.0	18.3	28.4	7.8
<a href="#">HR-2VDX0F-01</a>	219	33.4	21.1	54.5	5.8
<a href="#">HR-V3R9W9-01</a>	220	19.4	13.2	32.6	7.4
<a href="#">HR-23UO4Y-01</a>	221	13.4	29.5	42.9	6.7
<a href="#">HR-6ZE3NZ-01</a>	222	23.8	16.9	40.7	6.9
<a href="#">HR-HXZR4E-01</a>	223	18.4	16.4	34.9	7.3
<a href="#">HR-YEOQN7-01</a>	224	17.5	17.9	35.3	7.3
<a href="#">HR-XN1HCV-01</a>	225	42.8	15.5	58.3	5.4
<a href="#">HR-4GEJCY-01</a>	226	3.8	13.0	16.8	8.8
<a href="#">HR-A3V43W-01</a>	227	0.1	14.0	14.1	8.9
<a href="#">HR-K1LKWY-01</a>	228	24.4	12.9	37.3	7.1
<a href="#">HR-5T8SR9-01</a>	229	34.6	15.1	49.7	6.1
<a href="#">HR-I0XE2V-01</a>	230	43.3	16.6	59.9	5.4
<a href="#">HR-V9U4N6-01</a>	231	29.9	18.5	48.5	6.2



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<a href="#">HR-WELJV8-01</a>	232	31.4	21.5	52.9	5.9
<a href="#">HR-MRMJUP-01</a>	233	20.4	18.3	38.7	7.0
<a href="#">HR-W7UJRV-01</a>	234	21.0	17.2	38.3	7.1
<a href="#">HR-RKSS9O-01</a>	235	8.5	13.8	22.3	8.3
<a href="#">HR-5MQV1B-01</a>	236	10.4	17.0	27.4	7.9
<a href="#">HR-001NOA-01</a>	237	15.8	20.0	35.8	7.2
<a href="#">HR-M3NQEW-01</a>	238	9.4	14.1	23.5	8.2
<a href="#">HR-67L893-01</a>	239	27.9	22.1	50.0	6.1
<a href="#">HR-PFGTLK-01</a>	240	18.8	14.0	32.8	7.4
<a href="#">HR-SO1WZV-01</a>	241	17.1	15.4	32.5	7.4
<a href="#">HR-VMP2WZ-01</a>	242	9.1	12.3	21.3	8.4
<a href="#">HR-SZSG91-01</a>	243	13.9	10.6	24.5	8.1
<a href="#">HR-7ED5A1-01</a>	244	30.8	16.5	47.3	6.3
<a href="#">HR-PW68QL-01</a>	301	20.4	9.0	29.4	7.7
<a href="#">HR-CKL16D-01</a>	302	12.4	12.8	25.2	8.1
<a href="#">HR-SKLBOM-01</a>	303	12.5	7.7	20.2	8.4
<a href="#">HR-76NFEC-01</a>	304	12.6	9.4	21.9	8.3
<a href="#">HR-8HX4P6-01</a>	305	12.1	8.5	20.6	8.4
<a href="#">HR-J7GTEZ-01</a>	306	8.1	10.1	18.2	8.6
<a href="#">HR-83CDOW-01</a>	307	5.7	20.5	26.2	7.9
<a href="#">HR-NUM1NG-01</a>	308	19.3	10.5	29.8	7.7
<a href="#">HR-E4TVMU-01</a>	309	43.4	15.4	58.8	5.4
<a href="#">HR-D4AETM-01</a>	310	16.6	14.7	31.3	7.6
<a href="#">HR-WENO9Z-01</a>	311	22.6	9.6	32.1	7.4
<a href="#">HR-KK5PIK-01</a>	312	32.7	10.6	43.3	6.6
<a href="#">HR-5AGHB7-01</a>	313	21.9	12.2	34.2	7.3
<a href="#">HR-Q9I8ZC-01</a>	314	24.7	15.7	40.4	6.9
<a href="#">HR-J65E4N-01</a>	315	34.3	12.5	46.8	6.4
<a href="#">HR-BZF2L1-01</a>	316	14.9	12.4	27.4	7.9



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<a href="#">HR-YZH70E-01</a>	317	25.4	7.4	32.8	7.4
<a href="#">HR-VIKAQW-01</a>	318	15.2	11.7	26.9	7.9
<a href="#">HR-DLAB4E-01</a>	319	41.6	16.6	58.2	5.4
<a href="#">HR-VRWABW-01</a>	320	23.0	11.2	34.3	7.3
<a href="#">HR-8KQIK1-01</a>	321	16.4	20.5	36.9	7.1
<a href="#">HR-B8ELCF-01</a>	322	29.4	10.8	40.2	6.9
<a href="#">HR-JI9DXC-01</a>	323	21.7	10.8	32.5	7.4
<a href="#">HR-JQQFO0-01</a>	324	19.3	11.9	31.2	7.6
<a href="#">HR-RL90CA-01</a>	325	44.8	13.9	58.7	5.4
<a href="#">HR-OWJ11U-01</a>	326	6.6	9.6	16.1	8.8
<a href="#">HR-NYFXZN-01</a>	327	2.0	11.0	12.9	9.1
<a href="#">HR-USW074-01</a>	328	23.6	13.2	36.9	7.2
<a href="#">HR-XE3I2G-01</a>	329	35.4	14.6	50.0	6.1
<a href="#">HR-S74JND-01</a>	330	44.1	16.3	60.3	5.4
<a href="#">HR-SIYMSZ-01</a>	331	30.6	17.3	47.9	6.3
<a href="#">HR-LUNYXU-01</a>	332	32.3	20.8	53.2	5.8
<a href="#">HR-WYY63B-01</a>	333	21.1	17.9	39.0	6.9
<a href="#">HR-Z41ZK2-01</a>	334	21.6	16.7	38.2	7.1
<a href="#">HR-H9WQQS-01</a>	335	8.9	13.7	22.6	8.3
<a href="#">HR-IEP58W-01</a>	336	10.8	16.5	27.3	7.9
<a href="#">HR-G6EG8R-01</a>	337	16.0	19.6	35.5	7.2
<a href="#">HR-NOLC23-01</a>	338	9.8	13.4	23.2	8.2
<a href="#">HR-DFE45Q-01</a>	339	27.9	22.1	50.0	6.1
<a href="#">HR-EF3HUC-01</a>	340	19.5	13.1	32.6	7.4
<a href="#">HR-7F456K-01</a>	341	17.6	15.1	32.7	7.4
<a href="#">HR-N2VLEG-01</a>	342	9.3	12.3	21.6	8.4
<a href="#">HR-3Q98A0-01</a>	343	14.4	10.3	24.7	8.1
<a href="#">HR-38DPUV-01</a>	344	31.3	15.8	47.1	6.3
<a href="#">HR-PA2TCW-01</a>	401	26.7	8.0	34.7	7.3



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<a href="#">HR-CNTUEL-01</a>	402	28.1	22.3	50.5	6.0
<a href="#">HR-WF1N3Y-01</a>	403	25.7	10.1	35.8	7.2
<a href="#">HR-VAO5NO-01</a>	404	39.8	10.0	49.9	6.1
<a href="#">HR-LHQ774-01</a>	405	29.1	10.2	39.2	6.9
<a href="#">HR-NS9VAP-01</a>	406	27.7	14.4	42.1	6.7
<a href="#">HR-LRL3NE-01</a>	407	23.2	13.7	36.9	7.2
<a href="#">HR-4BZKZ0-01</a>	408	27.3	8.9	36.2	7.2
<a href="#">HR-MKY5WK-01</a>	409	36.9	10.2	47.0	6.3
<a href="#">HR-1RCEL0-01</a>	410	22.0	16.3	38.3	7.1
<a href="#">HR-QMETL4-01</a>	411	23.6	10.5	34.1	7.3
<a href="#">HR-S66X92-01</a>	412	26.3	16.3	42.6	6.7
<a href="#">HR-BNNC4N-01</a>	413	19.4	14.4	33.8	7.4
<a href="#">HR-COMBG3-01</a>	414	23.1	10.8	33.9	7.4
<a href="#">HR-BHZK6O-01</a>	415	21.2	12.2	33.4	7.4
<a href="#">HR-YH9L38-01</a>	416	32.5	18.2	50.7	6.0
<a href="#">HR-1D3BHE-01</a>	417	28.6	12.3	41.0	6.8
<a href="#">HR-A60ENL-01</a>	418	26.4	18.2	44.6	6.5
<a href="#">HR-W9UWYY-01</a>	419	38.5	12.2	50.7	6.0
<a href="#">HR-25W75P-01</a>	420	29.3	11.0	40.2	6.9
<a href="#">HR-RSXOCY-01</a>	421	20.7	17.9	38.6	7.0
<a href="#">HR-T4BUB9-01</a>	422	35.8	18.7	54.5	5.7
<a href="#">HR-P3J2MA-01</a>	423	6.7	9.7	16.4	8.8
<a href="#">HR-4AGG65-01</a>	424	2.5	10.1	12.6	9.1
<a href="#">HR-6YJWYK-01</a>	425	30.9	12.9	43.7	6.6
<a href="#">HR-X62S86-01</a>	426	40.1	16.0	56.0	5.6
<a href="#">HR-IFJO94-01</a>	427	39.7	17.9	57.6	5.5
<a href="#">HR-VPE0S1-01</a>	428	24.3	20.7	45.1	6.4
<a href="#">HR-S02N53-01</a>	429	32.3	21.5	53.8	5.8
<a href="#">HR-RW9MA9-01</a>	430	21.4	17.1	38.5	7.0



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<a href="#">HR-M82O9M-01</a>	431	21.8	15.7	37.5	7.1
<a href="#">HR-9CER3N-01</a>	432	8.9	13.7	22.5	8.3
<a href="#">HR-MAFODF-01</a>	433	9.5	15.5	25.0	8.1
<a href="#">HR-SNKGGN-01</a>	434	14.3	19.1	33.4	7.4
<a href="#">HR-3FUK97-01</a>	435	6.9	13.8	20.7	8.4
<a href="#">HR-322SO5-01</a>	436	27.9	21.1	49.0	6.2
<a href="#">HR-VYB0SB-01</a>	437	19.7	12.6	32.3	7.4
<a href="#">HR-UZ2BNQ-01</a>	438	17.7	14.5	32.3	7.4
<a href="#">HR-VED8RQ-01</a>	439	26.8	16.6	43.4	6.6
<a href="#">HR-JB9MIM-01</a>	440	13.9	10.2	24.1	8.2
<a href="#">HR-579KY2-01</a>	441	29.1	15.8	45.0	6.5
<a href="#">HR-2TDLGF-01</a>	501	6.1	14.8	20.9	8.4
<a href="#">HR-O1FHZL-01</a>	502	35.8	10.0	45.8	6.4
<a href="#">HR-YX7LEM-01</a>	503	40.9	16.8	57.7	5.5
<a href="#">HR-T2LDHA-01</a>	504	44.8	16.1	60.9	5.3
<a href="#">HR-5XZ7MB-01</a>	505	16.1	10.3	26.3	7.9
<a href="#">HR-NEYM8P-01</a>	506	20.7	21.5	42.2	6.7
<a href="#">HR-U67MPA-01</a>	507	26.8	21.3	48.1	6.2
<a href="#">HR-0GK6W2-01</a>	508	42.6	11.6	54.2	5.8
<a href="#">HR-YU7L7E-01</a>	509	37.7	16.2	53.9	5.8
<a href="#">HR-T8HPT9-01</a>	510	35.7	14.3	49.9	6.1
<a href="#">HR-7EKT6P-01</a>	511	12.0	9.7	21.7	8.4
<a href="#">HR-6XBHY7-01</a>	512	12.4	16.5	29.0	7.8
<a href="#">HR-8S92DF-01</a>	513	26.8	17.8	44.6	6.5
<a href="#">HR-AFQD27-01</a>	514	18.0	10.7	28.8	7.8
<a href="#">HR-ZIHJ76-01</a>	515	37.9	15.9	53.8	5.8
<a href="#">HR-MA8D32-01</a>	516	29.0	18.2	47.2	6.3
<a href="#">HR-F9YUW0-01</a>	517	9.5	13.8	23.3	8.2
<a href="#">HR-S946TG-01</a>	518	12.5	9.2	21.8	8.4





## Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m <sup>2</sup> )	Cooling load (MJ/m <sup>2</sup> )	Total load (MJ/m <sup>2</sup> )	Star rating
<a href="#">HR-3U8APB-01</a>	519	34.3	19.4	53.7	5.8
<a href="#">HR-BZ9CDL-01</a>	601	37.8	15.8	53.6	5.8
<a href="#">HR-74FT2J-01</a>	602	28.4	17.3	45.6	6.4
<a href="#">HR-8G3EKW-01</a>	603	9.2	13.8	23.0	8.3
<a href="#">HR-LQO425-01</a>	604	18.8	9.6	28.4	7.8
<a href="#">HR-DFYH1K-01</a>	605	44.7	14.0	58.8	5.4
<a href="#">HR-OGNT4T-01</a>	701	45.1	18.3	63.4	5.2
<a href="#">HR-FL94CF-01</a>	702	31.9	20.3	52.2	5.9
<a href="#">HR-2QTUT2-01</a>	703	11.8	15.2	27.0	7.9
<a href="#">HR-S0111A-01</a>	704	33.7	12.5	46.2	6.4
<a href="#">HR-J5UA0A-01</a>	705	39.6	20.4	60.0	5.4
Average	218x (Total)	23.0	15.6	38.6	7.0

## Explanatory Notes

### About this report

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

### Accredited Assessors

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

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

### Disclaimer

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

# Nationwide House Energy Rating Scheme NatHERS Certificate No. #HR-3GM7NU-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 101, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	71.3	Suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>76.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

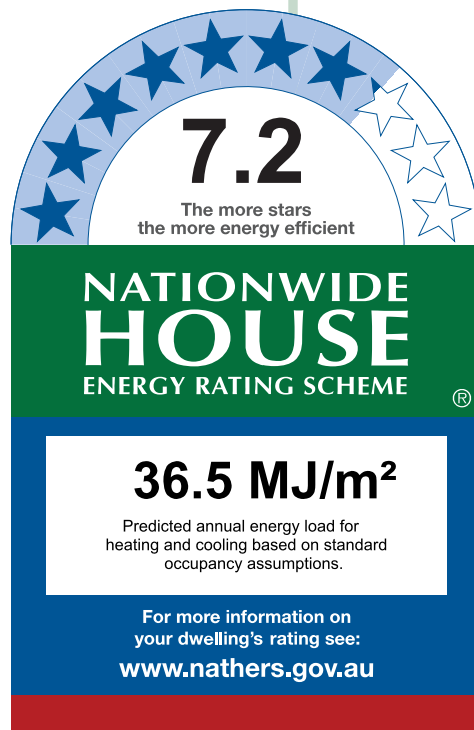
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

## National Construction Code (NCC) requirements

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

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

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



## Thermal Performance

Heating	Cooling
<b>25.3</b>	<b>11.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

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

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-3GM7NU-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06	2700	2100	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 01	STG-002-01 A	W05	1800	900	Awning	90	W	None
Bedroom 02	STG-002-01 A	W04	1800	900	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W07	2700	3155	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	3048	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2731	N	4641	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3811	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3239	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1608	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4466	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	804	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3662	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2498	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	296	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4509	W	2757	Yes
Laundry	HEBEL-100-REFL-CAV1	2740	2371	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	33.1	2.00
INT-PB	Internal Plasterboard Stud Wall	38.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	33.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile

## Ceiling type

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

## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		



## Roof type

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

## Explanatory Notes

### About this report

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

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

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

### Accredited assessors

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

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

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

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

### Disclaimer

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

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

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

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

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-ZETLNA-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 102, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	47.1	Suburban
Unconditioned*	4.5	<b>NatHERS climate zone</b>
Total	51.6	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

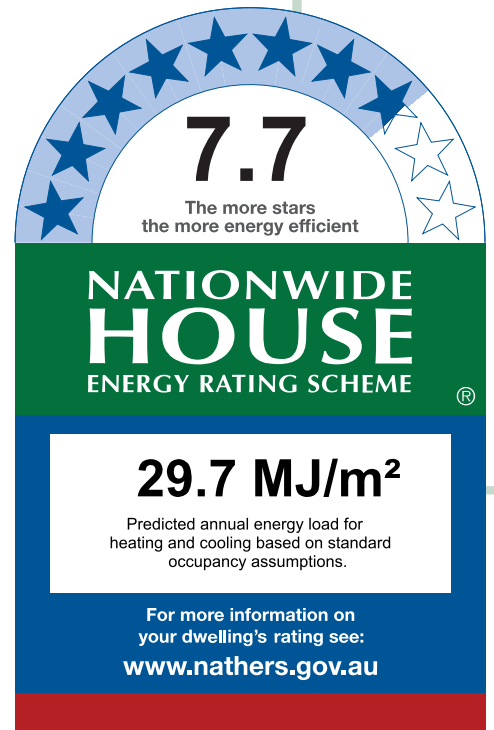
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>12.2</b>	<b>17.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-ZETLNA-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-a-a	2700	2400	Sliding	45	W	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	STG-002-01 A	W06-b-a	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-h-a	2700	2100	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W01	1800	900	Awning	90	W	None
Kitchen/Living	STG-002-01 A	W02	1800	895	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3547	W	2696	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	E	3435	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2703	N	3683	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1806	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1141	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3903	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	7647	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	18.6	2.00
INT-PB	Internal Plasterboard Stud Wall	17.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.2	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.



## Explanatory Notes

### About this report

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

### Accredited assessors

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

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-SWKMZV-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 103, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	50.1	Suburban
Unconditioned*	4.5	<b>NatHERS climate zone</b>
Total	54.6	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

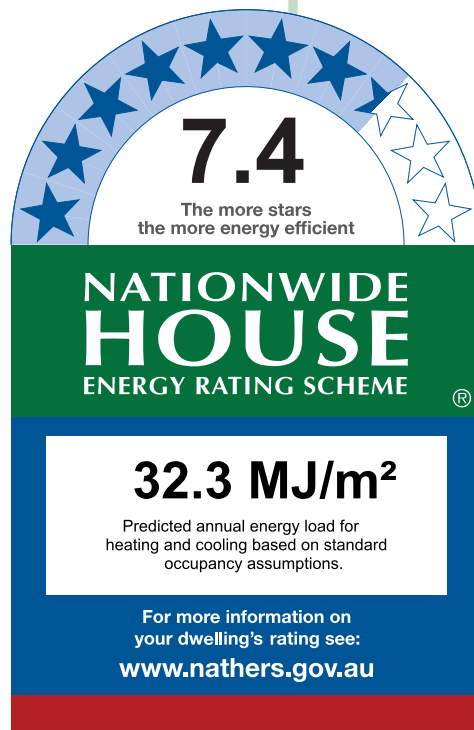
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>13.2</b>	<b>19.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-SWKMZV-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05	2700	2400	Sliding	45	W	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	W	2683	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3286	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1482	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1312	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4424	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1141	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	45.5	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	39.3	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	100	Sealed

\* Refer to glossary.



### Ceiling penetrations\*

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

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

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

\* Refer to glossary.



## Explanatory Notes

### About this report

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-CI1JSP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 104, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	50.1	Suburban
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>54.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

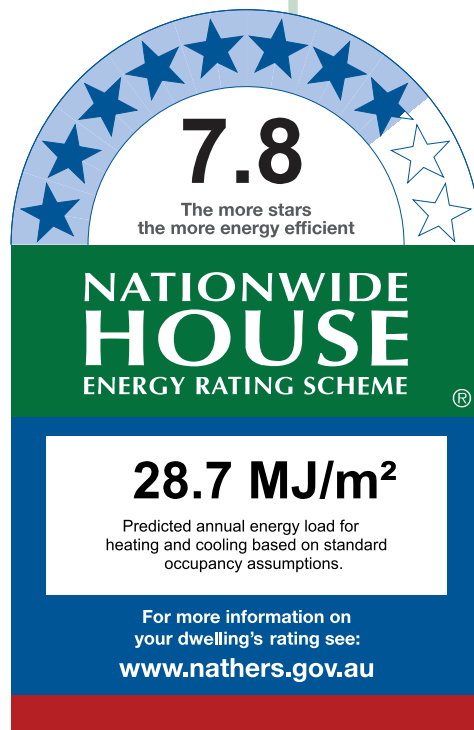
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>15.2</b>	<b>13.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, 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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### Genuine certificate

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

### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-f	2700	2400	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-e	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-i	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	E	2682	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3286	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1482	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1312	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4424	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.9	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	37.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	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	100	Sealed

\* Refer to glossary.





## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.



## Explanatory Notes

### About this report

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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

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-I3KDTF-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 105, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	50.0	Suburban
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>54.5</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>16.2</b>	<b>18.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-I3KDTF-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-a	2700	2400	Sliding	45	W	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-b	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-h	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	W	2684	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3286	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1806	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1141	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4100	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	49.4	2.00
INT-PB	Internal Plasterboard Stud Wall	18.3	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.8	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	36.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	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	100	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.



## Explanatory Notes

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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-1Q19QS-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 106, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	98.3	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>103.4</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

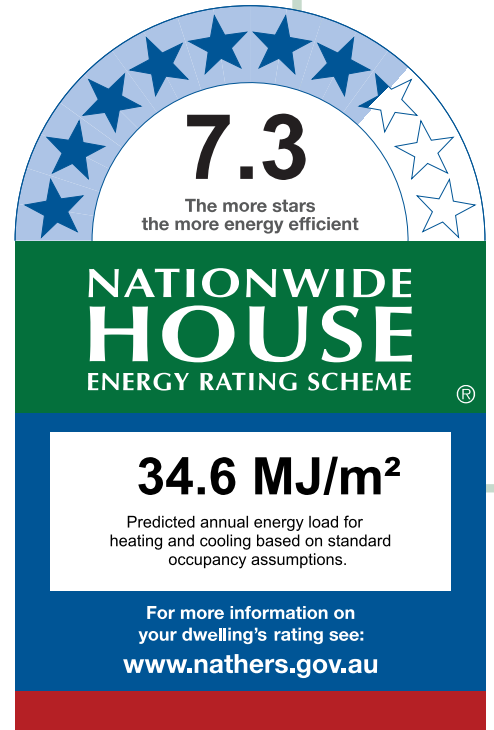
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>20.0</b>	<b>14.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-1Q19QS-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W04	1800	1500	Awning	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-002-01 A	W06	1800	1015	Awning	90	N	None
Bedroom 03	STG-002-01 A	W01	1800	2400	Awning	45	N	None
Bedroom 03	STG-005-02 A	W05	2700	2400	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W07	2700	3000	Sliding	60	N	None
Kitchen/Living	STG-002-01 A	W02	1800	1500	Awning	45	E	None
Kitchen/Living	STG-002-01 A	W03	1800	1500	Awning	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
----------	-------------	------------	-----------	-------------

\* Refer to glossary.

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3408	E	3223	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	5059	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	211	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	100	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	191	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1439	N	3159	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3023	N		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3302	E	8875	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	402	S		Yes
Hallway	HEBEL-100-REFL-CAV1	2740	3046	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	N	2376	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8743	E	3223	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	783	W	3572	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	39.4	2.00
INT-PB	Internal Plasterboard Stud Wall	80.9	0.00



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	16.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.8	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.0	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.5	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	37.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile

## Ceiling type

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

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed

\* Refer to glossary.



### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Ensuite	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-RCEKKT-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 107, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	92.7	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>97.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

**40.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>26.0</b>	<b>14.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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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### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01	1800	1200	Awning	90	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-001-01 A	W05	2700	1200	Casement	72	E	None
Bedroom 03	STG-005-02 A	W03	2700	2560	Sliding	45	N	None
Bedroom 03	STG-002-01 A	W04	1800	2700	Awning	29	E	None
Kitchen/Living	STG-005-02 A	W02	2700	2100	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1905	E	3530	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1587	E	5971	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	4869	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	180	N		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	107	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3429	N	4323	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3176	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3471	S	3561	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2413	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	613	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	1091	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	678	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	134	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2434	E	3530	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	318	W		Yes
Storage	HEBEL-100-REFL-CAV1	2740	2964	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	2497	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	3111	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	37.2	2.00

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	80.1	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.9	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.5	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.1	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.8	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.0	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.6	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.6	N/A	0.00	Tile
Storage	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.9	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
Bedroom 01	2	Downlight	100	Sealed



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Storage	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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

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

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-RRE4JY-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 108, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	48.2 Suburban
Unconditioned*	6.0 NatHERS climate zone
Total	54.2 56 - Mascot AMO
Garage	0.0



### Accredited assessor

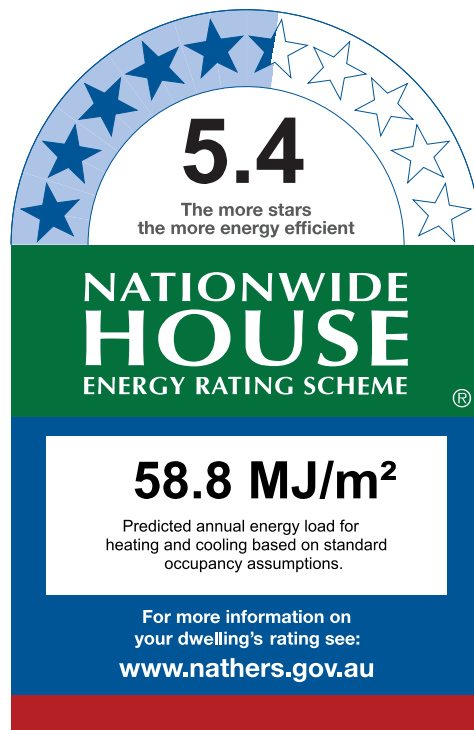
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

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



### Thermal Performance

Heating	Cooling
<b>42.9</b>	<b>15.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-RRE4JY-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-h	2700	2050	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03-f	2700	2322	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	STG-005-02 A	W02-g	2700	2392	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3074	W	2992	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2880	S	2948	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3622	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2983	N	7630	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	147	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	141	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	58.3	2.00
INT-PB	Internal Plasterboard Stud Wall	21.3	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.8	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

\* Refer to glossary.



### Ceiling penetrations\*

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

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

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

\* Refer to glossary.

## Explanatory Notes

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-IYB1LM-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 109, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	80.4	Suburban
Unconditioned*	7.0	<b>NatHERS climate zone</b>
<b>Total</b>	<b>87.4</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

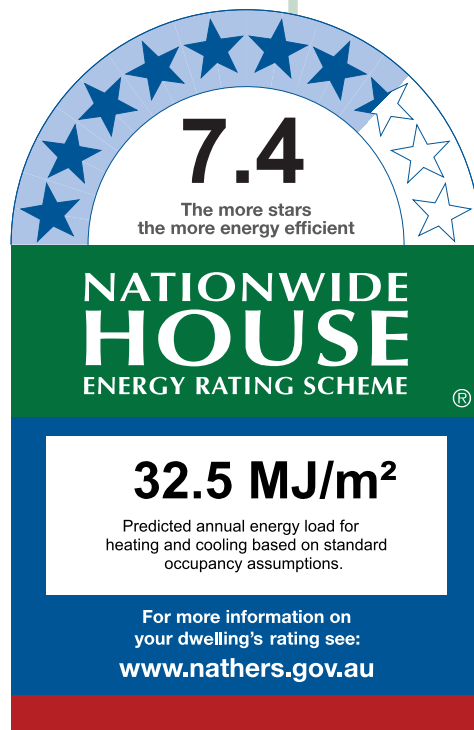
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>15.2</b>	<b>17.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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## 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?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06	2700	2307	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04	2700	889	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	STG-005-02 A	W05	2700	2400	Sliding	45	W	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	2949	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1440	S	7143	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2074	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	W	2949	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	719	E		Yes
Laundry	HEBEL-100-REFL-CAV1	2740	381	N		Yes
Laundry	HEBEL-100-REFL-CAV1	2740	826	E		Yes
Study	HEBEL-100-REFL-CAV1	2740	380	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	80.5	2.00
INT-PB	Internal Plasterboard Stud Wall	66.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.9	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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\* Refer to glossary.





## Ceiling type

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

## Ceiling penetrations\*

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-8NKAHF-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 110, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	98.9	Suburban
Unconditioned*	7.6	<b>NatHERS climate zone</b>
<b>Total</b>	<b>106.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

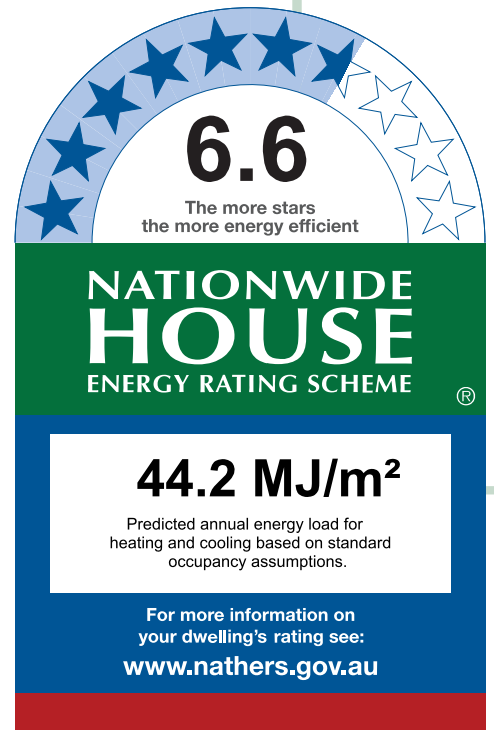
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>25.7</b>	<b>18.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-8NKAHF-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-a	2700	1169	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	STG-005-02 A	W05	2700	2400	Sliding	45	E	None
Bedroom 03	STG-002-01 A	W02	600	1200	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W04-a	2700	2479	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W03-a	2700	3412	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W06-a	600	900	Awning	90	S	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2205	S	5283	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3030	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	215	ESE		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2267	N		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1717	N	5097	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1904	E	6589	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2985	E	2888	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3598	S	1995	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2497	N		No
Ensuite	HEBEL-100-REFL-CAV1	2740	593	W		No
Entry	HEBEL-100-REFL-CAV1	2740	190	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	296	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4008	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6106	N	4655	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5339	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	63.1	2.00
INT-PB	Internal Plasterboard Stud Wall	87.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
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## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.6	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.9	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.5	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.1	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.8	N/A	0.00	Tile
Study/Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.3	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	1	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 03	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Study/Entry	2	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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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-S77DPF-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 111, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	74.2	Suburban
Unconditioned*	3.9	<b>NatHERS climate zone</b>
<b>Total</b>	<b>78.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

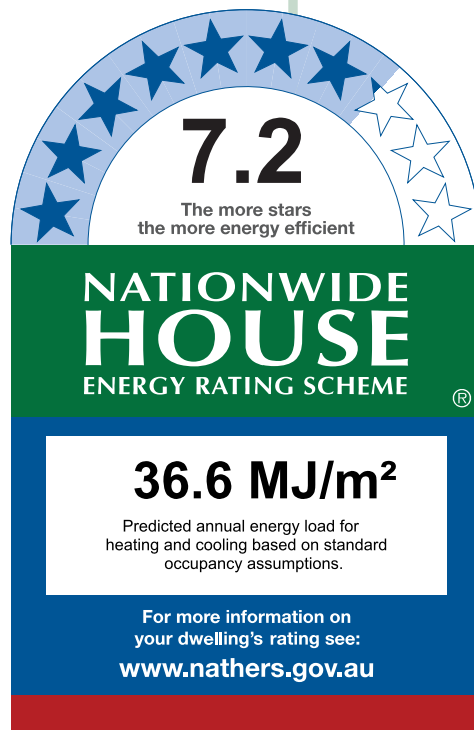
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>22.9</b>	<b>13.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-S77DPF-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-005-02 A	W02-b	2700	2190	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*
Bedroom 02	STG-002-01 A	W03	1800	1101	Awning	90	W	None
Kitchen/Living	STG-005-02 A	W01-i	2700	2781	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3009	W	2263	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3757	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1639	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4006	E	2772	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	98.2	2.00
INT-PB	Internal Plasterboard Stud Wall	52.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.2	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.1	N/A	0.00	Carpet
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	30.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile

## Ceiling type

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



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	4	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	2	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

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-ZZZ93H-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 112, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	49.5	Suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>55.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

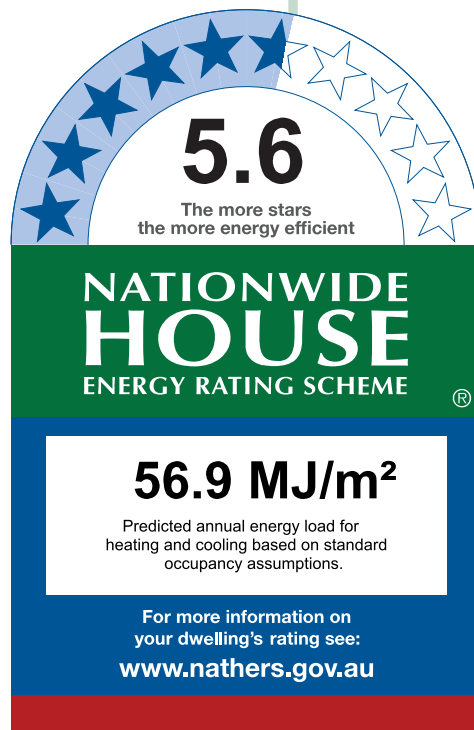
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>35.5</b>	<b>21.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

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## Certificate Check

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

### Genuine certificate

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

### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W03-b	2700	2026	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	STG-005-02 A	W05-b	2700	3000	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W01	2700	2313	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W02	600	1060	Awning	90	S	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2996	W	3018	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3602	W	8	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3007	N	3003	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2187	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.3	2.00
INT-PB	Internal Plasterboard Stud Wall	23.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.6	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	28.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.1	N/A	0.00	Tile

## Ceiling type

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



## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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

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

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

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.

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-KIY1RE-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 113, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	69.0	Suburban
Unconditioned*	6.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

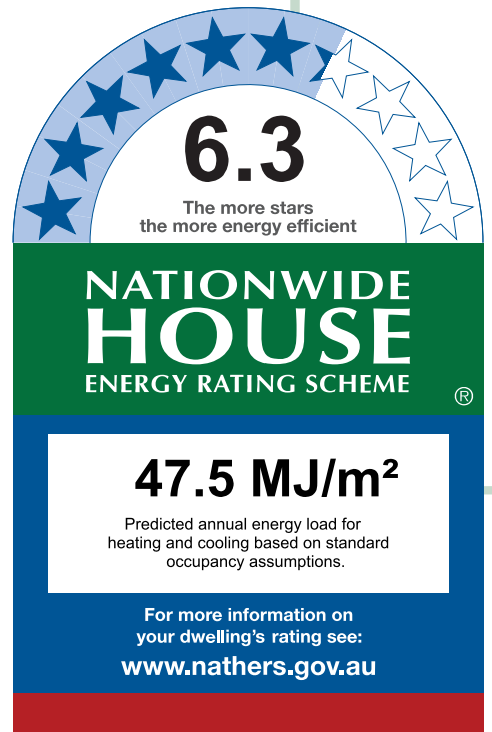
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>33.0</b>	<b>14.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-KIY1RE-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-c	2700	1085	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-b	2700	2212	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	STG-005-02 A	W03-c	2700	2410	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W01	2700	1800	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes



## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1369	W	5485	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	2205	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3112	S	1282	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4034	W	28	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1954	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2177	S	4980	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	62.4	2.00
INT-PB	Internal Plasterboard Stud Wall	49.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	37.8	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	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-OAQZ57-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 114, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	76.9	Suburban
Unconditioned*	3.9	<b>NatHERS climate zone</b>
<b>Total</b>	<b>80.7</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

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**7.4**  
The more stars  
the more energy efficient

**NATIONWIDE  
HOUSE**  
ENERGY RATING SCHEME

**32.5 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>18.3</b>	<b>14.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

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## Certificate Check

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### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on 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 installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-c	2700	1157	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*
Bedroom 02	STG-002-01 A	W03	1800	1101	Awning	90	W	None
Kitchen/Living	STG-005-02 A	W02-h	2700	2700	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4081	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3051	W	2015	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1652	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	323	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3951	E	2757	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	100.5	2.00
INT-PB	Internal Plasterboard Stud Wall	47.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.8	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.2	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.5	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.6	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.8	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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\* 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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	1	Exhaust Fan	350	Sealed
Entry	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.



## Explanatory Notes

### 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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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-C995J1-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 115, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 106.6	Suburban
<b>Unconditioned*</b> 4.2	<b>NatHERS climate zone</b>
<b>Total</b> 110.8	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

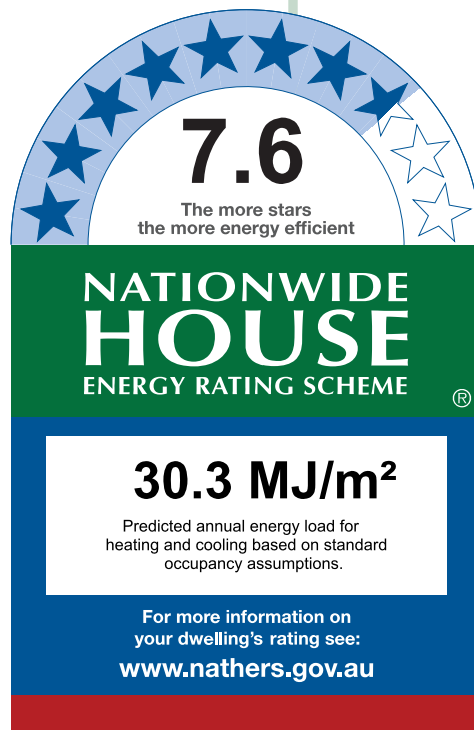
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>20.8</b>	<b>9.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-C995J1-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-m	2700	2300	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-d	600	1200	Awning	90	S	None
Bedroom 02	STG-005-02 A	W02-l	2700	1191	Sliding	45	E	None
Bedroom 03	STG-005-02 A	W05-e	2700	1142	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W04-f	2700	2401	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W03-i	2700	3163	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2973	E	2927	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3257	S	2561	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2445	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1686	E	6346	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3018	E	5897	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3584	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4007	E	5632	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5934	N	5165	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	260	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1415	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	548	E	6347	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	71.2	2.00
INT-PB	Internal Plasterboard Stud Wall	82.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	19.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.6	N/A	0.00	Carpet

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.5	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	50.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.8	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.2	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	0.00	Tile

## Ceiling type

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

## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
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\* 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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<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-CLW60P-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 116, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	80.3	Suburban
Unconditioned*	7.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>87.5</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

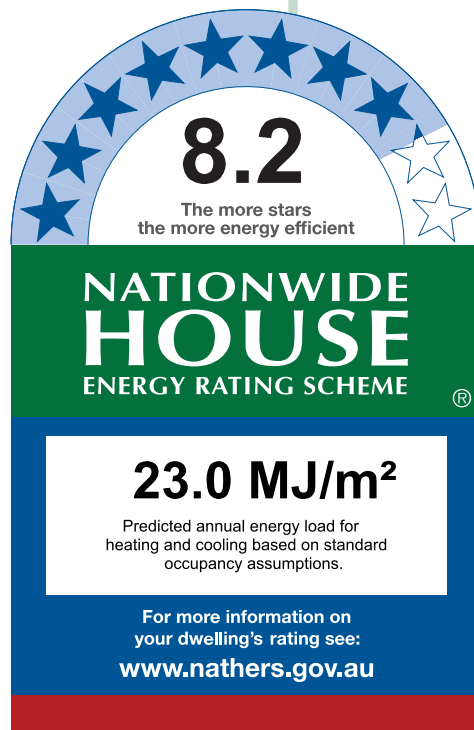
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>1.3</b>	<b>21.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-CLW60P-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-k	2700	839	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-002-01 A	W04-d	1800	1060	Awning	90	W	None
Kitchen/living	STG-005-02 A	W02-j	2700	2390	Sliding	45	E	None
Kitchen/living	STG-002-01 A	W03-g	1800	2400	Awning	30	N	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	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*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	988	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1637	E	5908	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1573	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4078	E		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	2810	S	6190	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5418	N		No

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	82.5	2.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.1	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.5	N/A	0.00	Tile
Kitchen/living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	33.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.3	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	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
Entry	1	Downlight	100	Sealed
Kitchen/living	4	Downlight	100	Sealed
Kitchen/living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

## 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-44YCPI-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 117, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	45.7	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

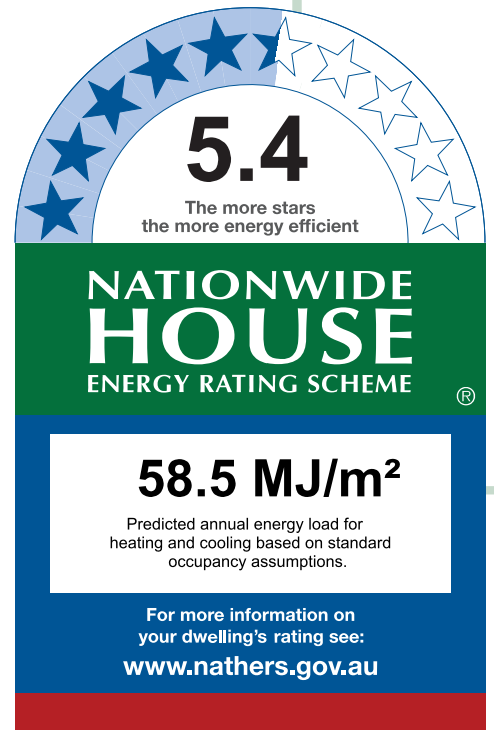
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>40.5</b>	<b>18.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-44YCPI-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-005-02 A	W03-h	2700	2136	Sliding	45	W	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W02-k	600	1200	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W01-l	2700	2808	Sliding	45	W	None
Study	STG-005-02 A	W04-e	2700	778	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3008	W	2314	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3727	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4426	W	2314	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3136	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	1891	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	41.7	2.00
INT-PB	Internal Plasterboard Stud Wall	28.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.8	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	28.5	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	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 absorbance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

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

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

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

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-WOA7YP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 118, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	96.7	Suburban
Unconditioned*	4.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>101.4</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

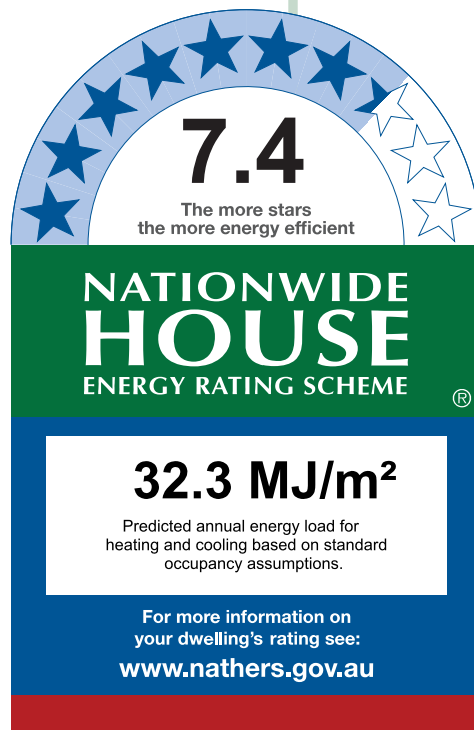
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>20.1</b>	<b>12.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-WOA7YP-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02-d	2700	995	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W03-d	2700	1109	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*
Bedroom 03	ALM-001-01 A	W01-e	2700	1193	Casement	90	E	None
Kitchen/Living	STG-005-02 A	W01-d	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)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2936	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1627	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1644	E	4789	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2813	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1994	S	1869	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	86.3	2.00
INT-PB	Internal Plasterboard Stud Wall	84.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.3	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	14.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.3	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
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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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-1HL5H8-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 119, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	58.5	Suburban
Unconditioned*	6.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>65.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

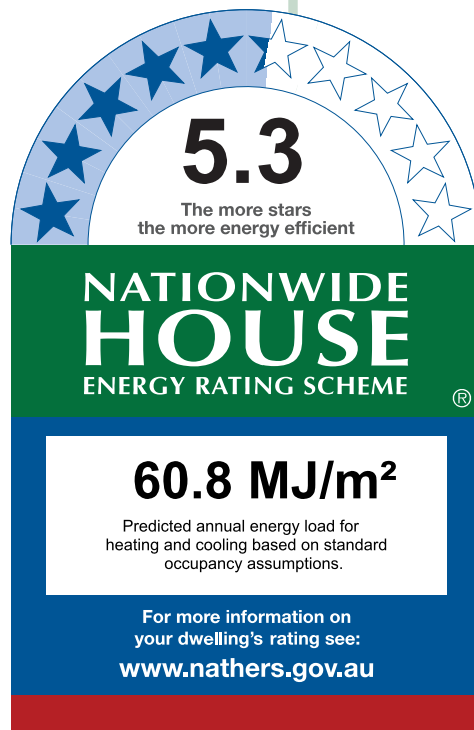
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>33.6</b>	<b>27.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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-002-03 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
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02-i	2700	2029	Sliding	45	E	None
Kitchen?living	STG-005-02 A	W04-c	2700	2643	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-002-03 A	W01	2700	2700	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3066	E	3110	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4490	N		Yes
Kitchen?living	HEBEL-100-REFL-CAV1	2740	3933	E	91	Yes
Kitchen?living	HEBEL-100-REFL-CAV1	2740	3019	N	3217	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.3	2.00
INT-PB	Internal Plasterboard Stud Wall	36.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.3	N/A	0.00	Tile
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.5	N/A	0.00	Tile
Kitchen?living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.1	N/A	0.00	Tile
Kitchen?living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Living 6	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.7	N/A	0.00	Carpet
Living 7	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.2	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
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\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen?living	5	Downlight	100	Sealed
Kitchen?living	1	Exhaust Fan	350	Sealed
Living 6	1	Downlight	100	Sealed
Living 7	2	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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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Conditioned</b>	a 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-FI6HBR-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 120, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	100.0	Suburban
Unconditioned*	3.9	<b>NatHERS climate zone</b>
<b>Total</b>	<b>103.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

**58.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>44.5</b>	<b>14.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-FI6HBR-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.40	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61

### Custom\* windows

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

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
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\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	ALM-001-03 A	W06	1800	2100	Awning	27	S	None
Bedroom 02	ALM-001-03 A	W05	1800	2100	Awning	27	S	None
Bedroom 03	ALM-002-03 A	W04	2700	2400	Sliding	45	E	None
Kitchen/Living	ALM-001-03 A	W01	1800	2700	Awning	27	E	None
Kitchen/Living	ALM-002-03 A	W02	2700	2100	Sliding	45	S	None
Study	ALM-001-01 A	W03	2700	1200	Casement	72	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	S	2313	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S	2313	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3599	S	2313	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3006	E	2672	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2646	S	8430	Yes
Study	HEBEL-100-REFL-CAV1	2740	2900	E	2672	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.0	2.00
INT-PB	Internal Plasterboard Stud Wall	92.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.4	N/A	0.00	Carpet

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.5	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.0	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	25.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.5	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.1	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	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	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

\* Refer to glossary.



### Ceiling penetrations\*

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

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

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

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<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-6HLIHY-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 121, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	43.6	Suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

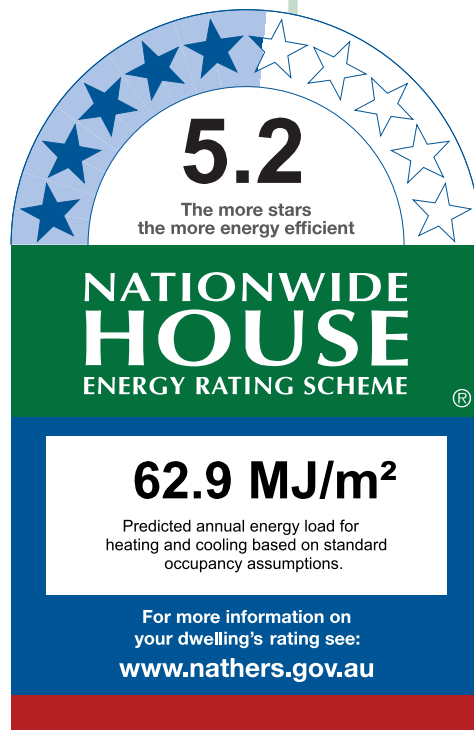
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>43.5</b>	<b>19.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-6HLIHY-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01	2700	1945	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	STG-005-02 A	W02	2700	2400	Sliding	45	W	None
Kitchen/Living	STG-002-01 A	W03	1800	2400	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3112	S	4501	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2943	W	6417	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3705	S	1635	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	678	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	55.3	2.00
INT-PB	Internal Plasterboard Stud Wall	20.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	27.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile

## Ceiling type

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

## Ceiling penetrations\*

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

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.



## Explanatory Notes

### About this report

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

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

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

### Accredited assessors

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

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-5I8SOH-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 122, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	43.6	Suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
Total	49.2	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

**55.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>35.8</b>	<b>20.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-5I8SOH-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-b	2700	1945	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	STG-005-02 A	W02-a	2700	2400	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W03-e	1800	2400	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes



## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3111	S	4500	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2943	E	6417	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3704	S		No

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.0	2.00
INT-PB	Internal Plasterboard Stud Wall	20.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	29.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	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
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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

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

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

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-N55ZYU-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 123, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	63.2	Suburban
Unconditioned*	3.7	<b>NatHERS climate zone</b>
<b>Total</b>	66.9	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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

**5.5**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**57.4 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>43.8</b>	<b>13.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-N55ZYU-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01	1800	2400	Awning	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	STG-005-02 A	W02	2700	2815	Sliding	45	S	None
Kitchen/Living	STG-005-02 A	W03	1800	1500	Sliding	45	W	None
Study	STG-005-02 A	W04	1800	1500	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	5229	S	1635	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2583	W	3879	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3790	S	4218	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	3704	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	2604	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	37.0	2.00
INT-PB	Internal Plasterboard Stud Wall	48.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Carpet
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	31.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.2	N/A	0.00	Carpet
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.6	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.1	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.3	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	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	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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



## 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.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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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	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.

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-NOGXF3-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 124, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	68.2	Suburban
Unconditioned*	4.0	<b>NatHERS climate zone</b>
<b>Total</b>	<b>72.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

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

**8.7**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**17.3 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>6.4</b>	<b>10.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

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## Certificate Check

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

### Genuine certificate

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

### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02-m	1800	1015	Awning	90	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 01	STG-005-02 A	W01-n	2700	1945	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-g	2700	1760	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03-j	2700	2807	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3133	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1313	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1736	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1693	E	3117	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	3879	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	281	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3413	S	13260	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3959	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3827	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	658	E	3082	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	29.7	2.00
INT-PB	Internal Plasterboard Stud Wall	46.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	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
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			

## 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-EDYDZX-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 125, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.9	Suburban
Unconditioned*	4.1	<b>NatHERS climate zone</b>
Total	49.0	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

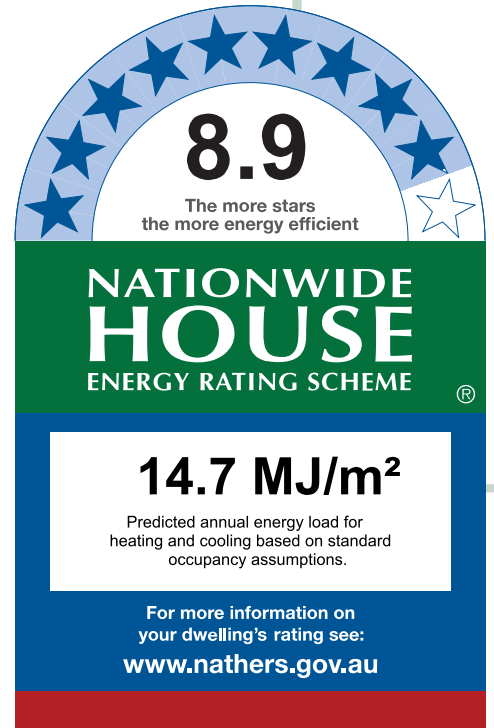
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>0.2</b>	<b>14.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and 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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To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-EDYDZX-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-c	2700	1850	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	STG-002-01 A	W01-j	1800	1022	Awning	90	N	None
Kitchen/Living	STG-005-02 A	W05-d	2700	1654	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2990	N	2983	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3612	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1910	W	3067	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.1	2.00
INT-PB	Internal Plasterboard Stud Wall	21.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	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
None			

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## Explanatory Notes

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-7KSKHR-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 126, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	69.8	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>74.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

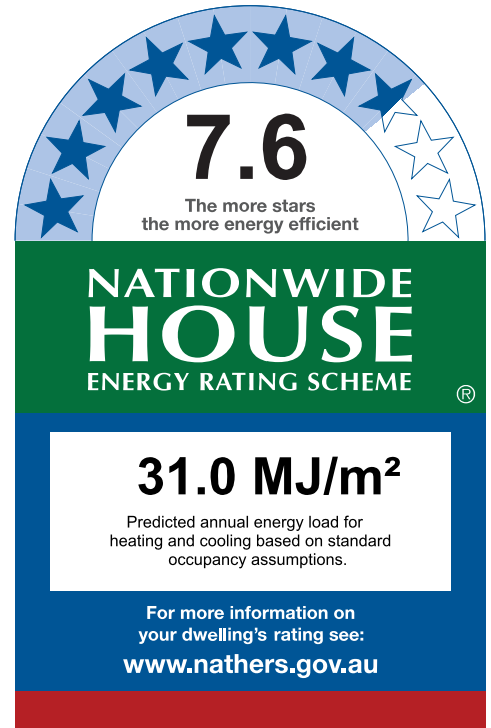
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>14.9</b>	<b>16.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04	2700	1200	Awning	60	W	None
Bedroom 02	ALM-002-01 A	W03	2700	2041	Sliding	45	W	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	1852	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	1545	Sliding	45	W	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	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-CAV11-A	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	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-CAV11-B	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-CAV11-A	2740	1595	W	5407	Yes
Bedroom 01	HEBEL-100-REFL-CAV11-B	2740	198	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV11-A	2740	3585	W	2249	Yes
Bedroom 02	HEBEL-100-REFL-CAV11-B	2740	3014	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	2241	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	1597	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	2420	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	29.2	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	63.1	2.00
INT-PB	Internal Plasterboard Stud Wall	11.1	2.00
INT-PB	Internal Plasterboard Stud Wall	15.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.8	N/A	0.00	Tile



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Linen	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile

## Ceiling type

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

## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

## 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-0KVIRM-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 127, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	79.5	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>83.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

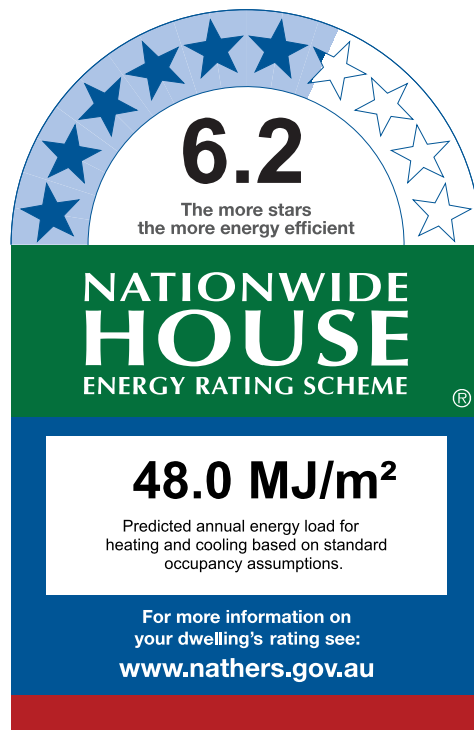
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>28.2</b>	<b>19.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-0KVIRM-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed 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	984	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W03	2700	973	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	2700	3110	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
VEL-011-01 W	Velux FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	VEL-011-01 W	SKYRW 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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	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-CAV11	2740	1588	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV11	2740	1877	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV11	2740	6097	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV11	2740	3571	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV11	2740	3003	S		Yes
Ensuite	HEBEL-100-REFL-CAV11	2740	1608	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	8002	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	4001	E	2628	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	5.7	0.00
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	29.6	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	32.1	2.00
INT-PB	Internal Plasterboard Stud Wall	36.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	14.7	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	4.3	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.1	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	7.6	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
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
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



## Explanatory Notes

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<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-GMC0NS-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 128, 4 Delmar Parade, DEE WHY, NSW,  
2099

**Lot/DP** 13a/342819

**NCC Class\*** 2

**Type** New

## Plans

**Main Plan** Project No. 221054

**Prepared by** Rothe Lowman

## Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	50.4	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>54.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

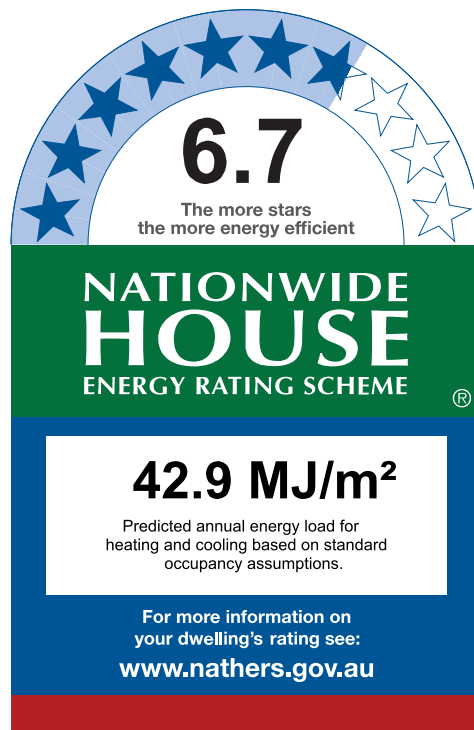
**Declaration of interest** No Conflict of Interest

## National Construction Code (NCC) requirements

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

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

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



## Thermal Performance

Heating	Cooling
<b>25.9</b>	<b>17.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

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

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-GMC0NS-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed 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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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-CAV11-A	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV11-B	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

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV11-A	2740	3006	E	2523	Yes
Bedroom 01	HEBEL-100-REFL-CAV11-B	2740	904	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV11-A	2740	105	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	3572	E	3427	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	19.5	0.00
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.9	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.7	2.00
INT-PB	Internal Plasterboard Stud Wall	14.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.0	N/A	0.00	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Carpet

## Ceiling type

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

## Ceiling penetrations\*

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

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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

## 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-Z16PY5-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 129, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type	
Conditioned*	47.3	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	51.6	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

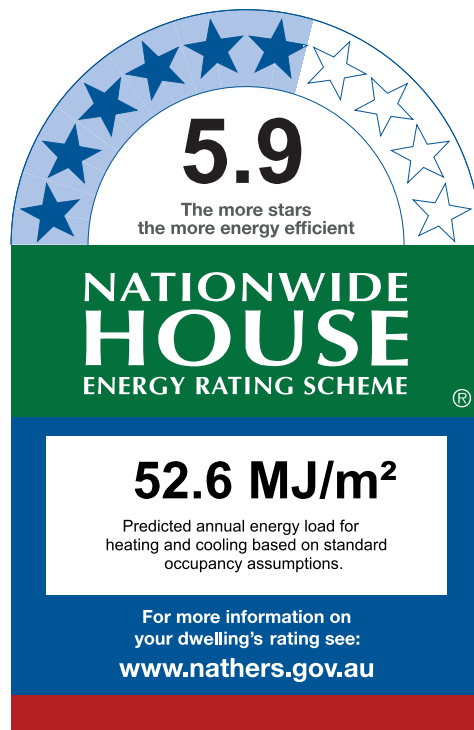
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>30.2</b>	<b>22.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-Z16PY5-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	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-CAV11	2740	3599	E	2523	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-CAV11	2740	3091	E	2523	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	4.9	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	56.8	2.00
INT-PB	Internal Plasterboard Stud Wall	28.6	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.6	N/A	0.00	Tile
bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.7	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
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
bedroom 01	2	Downlight	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
----------	----------	---------------

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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

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

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

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-MC5JGX-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 130, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	71.5	Suburban
Unconditioned*	3.9	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.4</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

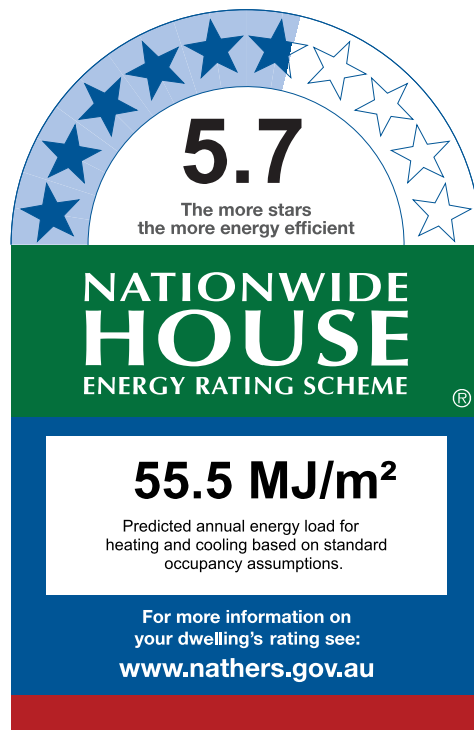
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>41.3</b>	<b>14.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-MC5JGX-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed 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

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W01	2700	3345	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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-CAV11-A	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV11-B	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-CAV11-A	2740	1513	E	6139	Yes
Bedroom 01	HEBEL-100-REFL-CAV11-B	2740	609	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV11-A	2740	3806	E	2533	Yes
Bedroom 02	HEBEL-100-REFL-CAV11-B	2740	3013	S		Yes
Ensuite	HEBEL-100-REFL-CAV11-B	2740	392	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	4001	E	2523	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	9.4	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	41.4	2.00
INT-PB	Internal Plasterboard Stud Wall	18.5	2.00
INT-PB	Internal Plasterboard Stud Wall	47.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.8	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	4.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.6	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.9	N/A	0.00	Tile
Linen	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.4	N/A	0.00	Tile

## Ceiling type

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

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	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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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-IZTBAB-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 131, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	73.7	Suburban
Unconditioned*	4.6	<b>NatHERS climate zone</b>
<b>Total</b>	<b>78.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

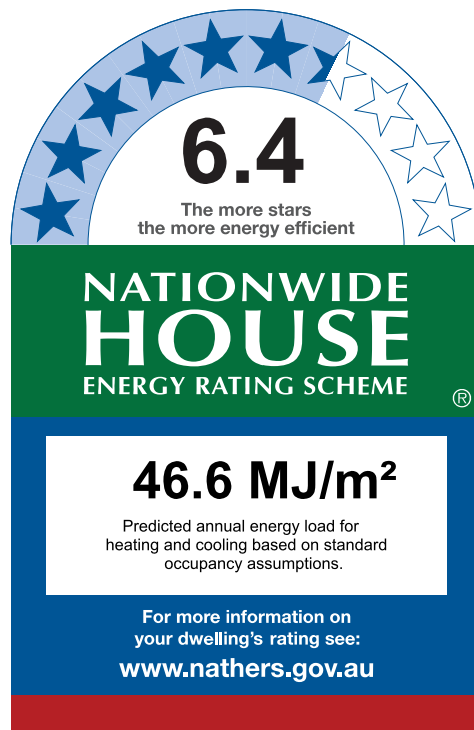
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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
<b>26.9</b>	<b>19.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed 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	2080	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	2700	3365	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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-CAV11-A	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV11-B	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-CAV11-A	2740	3599	E	2523	Yes
Bedroom 01	HEBEL-100-REFL-CAV11-A	2740	3142	S	1970	Yes
Bedroom 02	HEBEL-100-REFL-CAV11-A	2740	3802	S	1932	Yes
Ensuite	HEBEL-100-REFL-CAV11-A	2740	1591	S	1974	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	5296	E	2600	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	289	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	427	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	3650	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	9.5	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	28.6	2.00
INT-PB	Internal Plasterboard Stud Wall	31.0	0.00
INT-PB	Internal Plasterboard Stud Wall	34.6	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.5	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
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.3	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*
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\* 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	0.00	No

## Ceiling penetrations\*

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

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

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

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-OSCMNP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 132, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	46.4 Suburban
Unconditioned*	5.8 NatHERS climate zone
Total	52.2 56 - Mascot AMO
Garage	0.0



### Accredited assessor

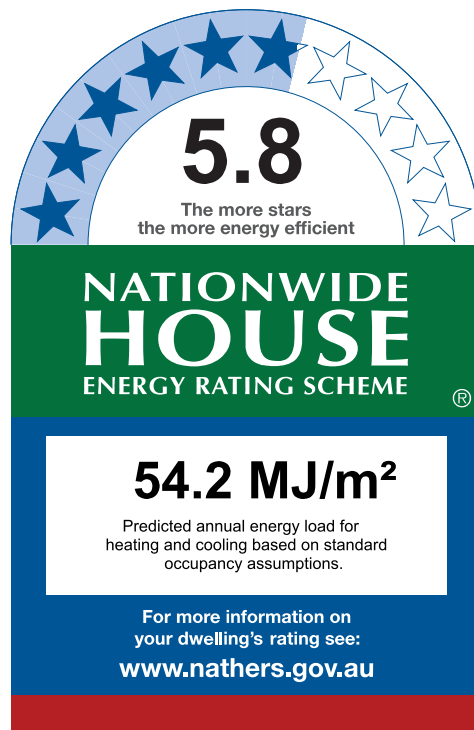
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

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



### Thermal Performance

Heating	Cooling
<b>34.9</b>	<b>19.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-OSCMNP-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed 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	2372	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03	2700	986	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	W02	2700	1936	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 <sup>2</sup> )	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-CAV11-A	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV11-B	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-CAV11-B	2740	178	W		Yes
Bathroom	HEBEL-100-REFL-CAV11-B	2740	101	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV11-A	2740	3566	S	5643	Yes
Bedroom 01	HEBEL-100-REFL-CAV11-A	2740	2963	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	395	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	3580	S	1940	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	3726	W	4168	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	272	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	333	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.1	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	11.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.00	Tile

## Ceiling type

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

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	4	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

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-KZ2EA6-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 133, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	70.7	Suburban
Unconditioned*	2.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>73.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

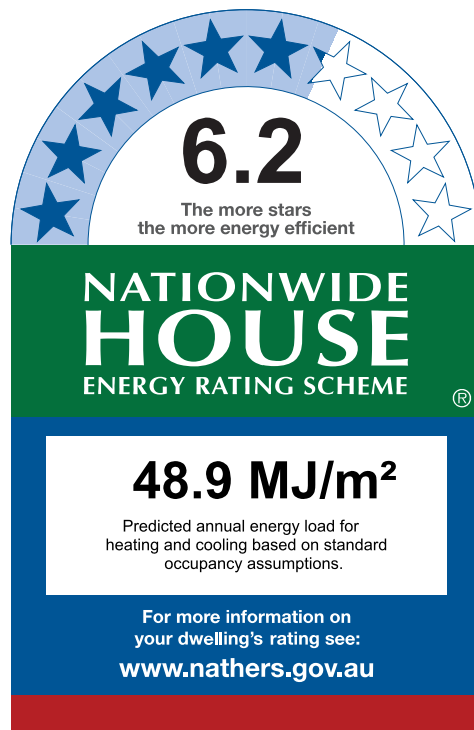
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>37.0</b>	<b>11.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-KZ2EA6-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	1187	Sliding	45	S	None
Bedroom 02	ALM-004-01 A	W03	2700	1139	Sliding	45	S	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-004-01 A	W02	2700	2084	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W01	2700	2070	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)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	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-CAV11	2740	3747	S	3771	Yes
Bedroom 02	HEBEL-100-REFL-CAV11	2740	3598	S	5490	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	5800	S	5490	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	3329	E	4029	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	3.9	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	63.5	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	1.1	0.00
INT-PB	Internal Plasterboard Stud Wall	23.2	2.00
INT-PB	Internal Plasterboard Stud Wall	22.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.1	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	4.0	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	2.5	N/A	0.00	Tile



## Ceiling type

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

## Ceiling penetrations\*

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-4P0MBD-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 134, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 69.4	Suburban
<b>Unconditioned*</b> 4.2	<b>NatHERS climate zone</b>
<b>Total</b> 73.7	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

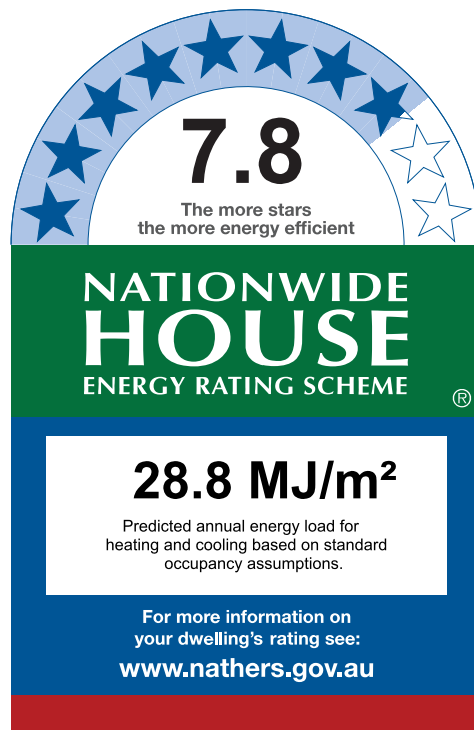
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>18.1</b>	<b>10.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed 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	1001	Sliding	45	S	None
Bedroom 01	ALM-002-01 A	W01	2700	1187	Double Hung	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-002-01 A	W06	2700	1130	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W08	2700	3110	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 <sup>2</sup> )	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-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	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-CAV11	2740	3607	S	3782	Yes
Bedroom 02	HEBEL-100-REFL-CAV11	2740	2998	S	3795	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	297	N		No
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	4000	N	2788	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	318	E		No

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	8.1	0.00
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	10.2	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	8.8	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	71.7	2.00
INT-PB	Internal Plasterboard Stud Wall	21.5	2.00
INT-PB	Internal Plasterboard Stud Wall	2.1	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.8	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	4.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.1	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

## 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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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-PENWU9-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 135, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type	
Conditioned*	47.7	Suburban
Unconditioned*	2.8	<b>NatHERS climate zone</b>
<b>Total</b>	50.5	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

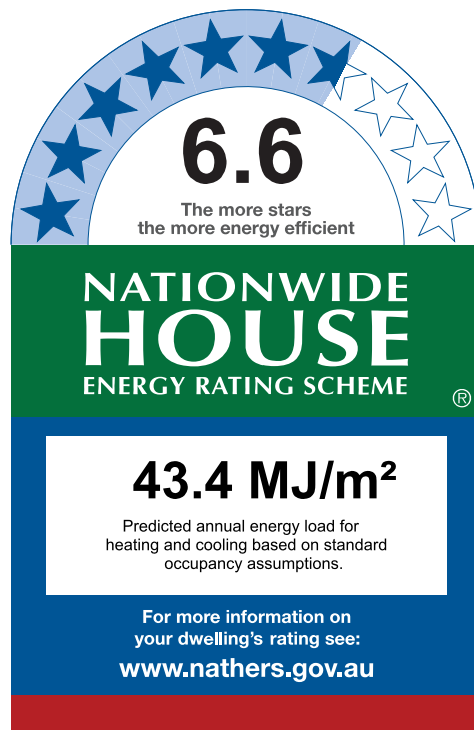
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>20.9</b>	<b>22.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-PENWU9-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed 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	1186	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W03	2700	2446	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W02	2700	2330	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	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-CAV11	2740	3069	N	3001	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	3599	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	2709	E	2915	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	85	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	276	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	3577	W	4196	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	8.1	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	7.7	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	31.6	2.00
INT-PB	Internal Plasterboard Stud Wall	11.5	2.00
INT-PB	Internal Plasterboard Stud Wall	22.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	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
Entry	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	22.7	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	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

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-P7IB1E-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 136, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	48.2 Suburban
Unconditioned*	4.4 NatHERS climate zone
Total	52.7 56 - Mascot AMO
Garage	0.0



### Accredited assessor

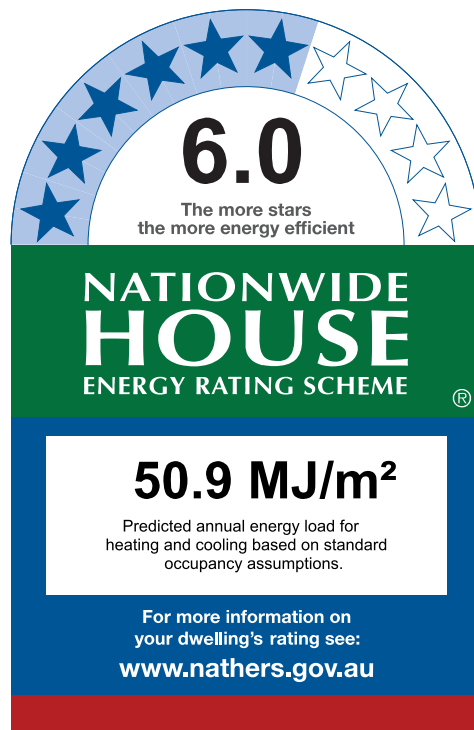
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

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### Thermal Performance

Heating	Cooling
<b>24.5</b>	<b>26.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	1148	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	W01	2700	2460	Awning	30	N	None
Kitchen/Living	ALM-002-04 A	W02	2700	3600	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04	600	1200	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	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-CAV11	2740	2308	N	4387	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	3598	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	5377	E	2198	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	4975	W	3238	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.9	0.00
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	1.5	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	40.4	2.00
INT-PB	Internal Plasterboard Stud Wall	17.3	2.00
INT-PB	Internal Plasterboard Stud Wall	9.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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
Berroom 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	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
Beroom 01	2	Downlight	200	Sealed
Kitchen/Living	3	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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

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

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

### 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-BG23O9-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 137, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 49.4	Suburban
<b>Unconditioned*</b> 4.7	<b>NatHERS climate zone</b>
<b>Total</b> 54.1	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

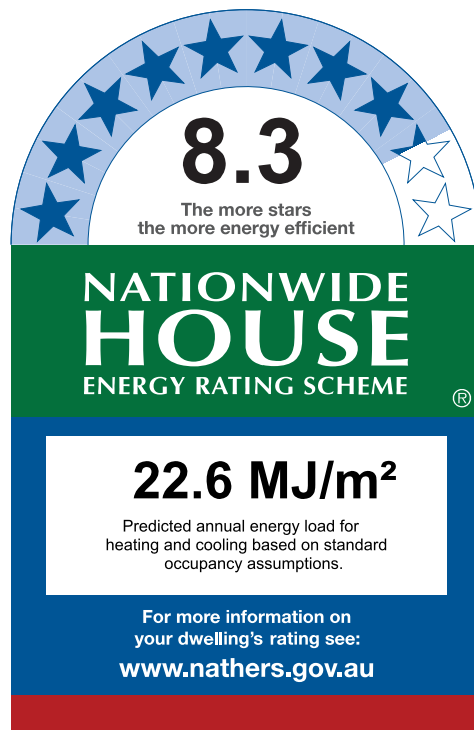
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>6.8</b>	<b>15.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-BG23O9-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed 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	1200	Awning	60	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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-CAV11-A	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV11-B	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
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\* 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-CAV11-B	2740	1799	W	3850	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	3832	N	2354	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	2033	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	262	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	344	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	19.6	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	58.8	2.00
INT-PB	Internal Plasterboard Stud Wall	3.4	0.00
INT-PB	Internal Plasterboard Stud Wall	11.1	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.2	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
Bathroom	2	Exhaust Fan	350	Sealed



### Ceiling penetrations\*

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

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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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<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-FDXDKJ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 138, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	48.0 Suburban
Unconditioned*	3.8 NatHERS climate zone
Total	51.8 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](http://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

**41.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>15.1</b>	<b>26.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-FDXDKJ-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper 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	1193	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	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 02	HEBEL-100-REFL-CAV11	2740	3262	N		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-CAV11	2740	4057	N	2238	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	1902	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	21.3	2.00
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	2.0	0.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	35.0	2.00
INT-PB	Internal Plasterboard Stud Wall	4.5	0.00
INT-PB	Internal Plasterboard Stud Wall	16.0	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.3	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.7	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
Bedroom 02	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed



### 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a 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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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	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-KAKWIP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 139, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 48.1	Suburban
<b>Unconditioned*</b> 2.2	<b>NatHERS climate zone</b>
<b>Total</b> 50.3	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

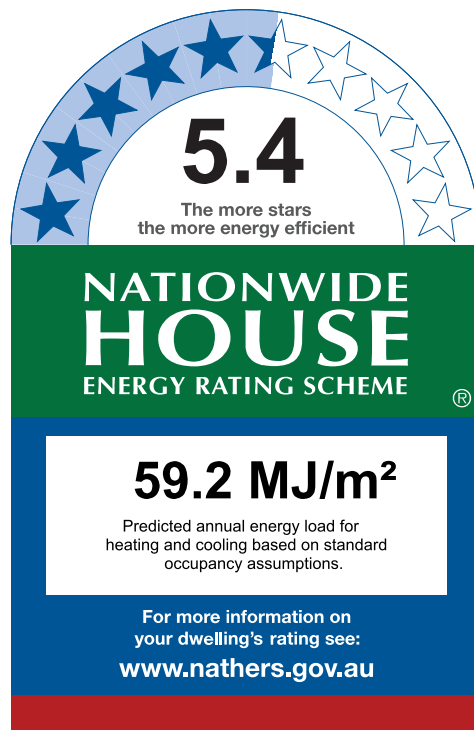
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>33.0</b>	<b>26.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-KAKWIP-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.40	0.49	0.47	0.51
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*
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## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1145	Sliding	45	S	None
Bedroom 01	ALM-001-03 A	W01	2700	1190	Casement	90	S	None
Kitchen/Living	ALM-002-04 A	W04	2700	1625	Sliding	45	E	None
Kitchen/Living	ALM-002-04 A	W02	2700	2571	Sliding	66	S	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

Location	Height (mm)	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-CAV11-A	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.33	Light (Surfmist)	2.00	Yes
HEBEL-100-REFL-CAV11-B	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-CAV11-A	2740	1693	S	1454	Yes
Bedroom 01	HEBEL-100-REFL-CAV11-A	2740	1990	E	20628	Yes
Bedroom 01	HEBEL-100-REFL-CAV11-B	2740	1373	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	2567	E	24132	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-A	2740	3602	S	2621	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11-B	2740	335	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	51.9	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	20.4	2.00
INT-PB	Internal Plasterboard Stud Wall	3.1	2.00
INT-PB	Internal Plasterboard Stud Wall	4.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	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	4.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.2	N/A	0.00	Carpet
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*
Laundry	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
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

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-OCNC6J-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 201, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	71.3	Suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>76.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

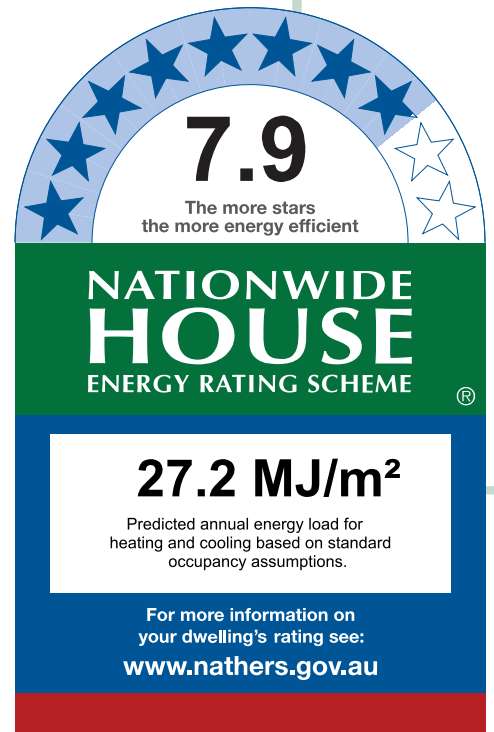
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### 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](http://www.abcb.gov.au).

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



### Thermal Performance

Heating	Cooling
<b>15.6</b>	<b>11.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-OCNC6J-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-g	2700	2100	Sliding	45	N	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W05-i	1800	900	Awning	90	W	None
Bedroom 02	STG-002-01 A	W04-l	1800	900	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W07-a	2700	3155	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 <sup>2</sup> )	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*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2731	N	4641	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3811	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3239	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1608	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	296	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4509	W	2757	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	78.1	2.00
INT-PB	Internal Plasterboard Stud Wall	38.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile



## Ceiling type

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

## Ceiling penetrations\*

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-0M909J-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 202, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	47.1	Suburban
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>51.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

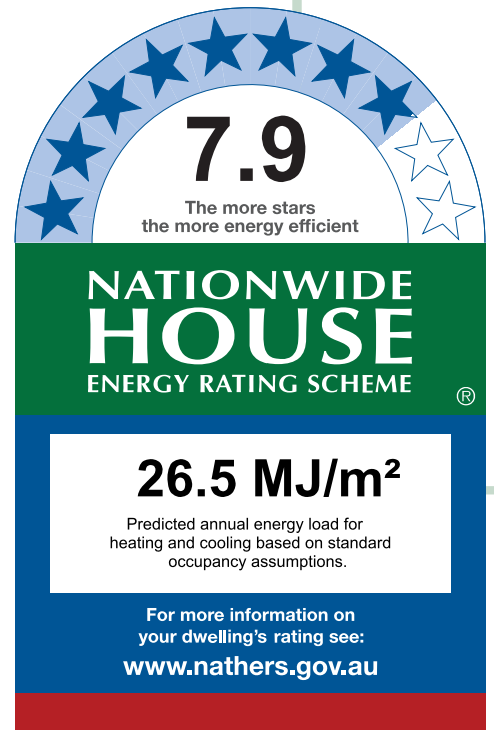
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>9.0</b>	<b>17.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

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## Certificate Check

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

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-a-a-a	2700	2400	Sliding	45	W	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	STG-002-01 A	W06-b-a-a	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-h-a-a	2700	2100	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W01-s	1800	900	Awning	90	W	None
Kitchen/Living	STG-002-01 A	W02-q	1800	895	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3547	W	2696	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	E	3434	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2703	N	3683	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	7647	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2809	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	29.6	2.00
INT-PB	Internal Plasterboard Stud Wall	17.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.3	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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## Glossary

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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-20XSPX-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 203, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	50.1	Suburban
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>54.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>7.6</b>	<b>20.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-20XSPX-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-h	2700	2400	Sliding	45	W	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-f	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-k	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes



## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	W	2682	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3286	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	67.6	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	39.3	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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

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

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

### Accredited assessors

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-81GBTP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 204, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 50.1	Suburban
<b>Unconditioned*</b> 4.5	<b>NatHERS climate zone</b>
<b>Total</b> 54.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

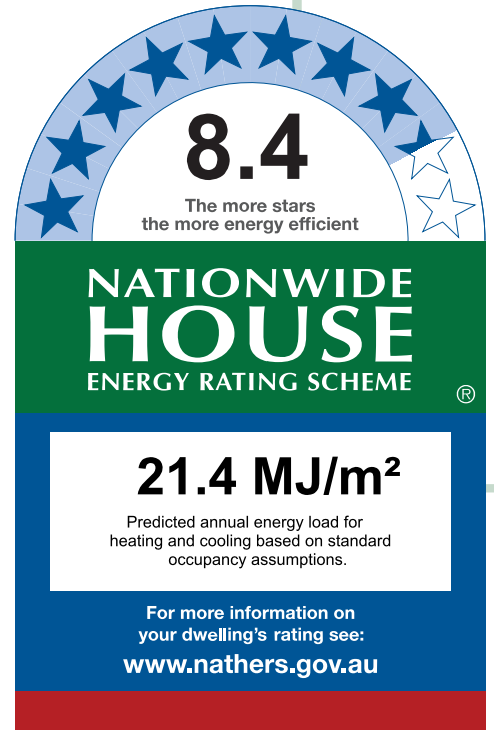
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>7.3</b>	<b>14.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-81GBTP-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-f-a	2700	2400	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-e-a	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-i-a	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	E	2682	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3286	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	67.1	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	39.3	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.





## Explanatory Notes

### About this report

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

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

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

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-EPM1N1-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 205, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	48.1	Suburban
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>52.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

**29.0 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>7.8</b>	<b>21.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-EPM1N1-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-a-b	2700	2400	Sliding	45	W	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-b-b	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-h-b	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	W	2684	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3286	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	320	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	286	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.8	2.00
INT-PB	Internal Plasterboard Stud Wall	18.3	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	36.1	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	0.6	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	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
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) 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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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently 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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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-1Z1Z0D-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 206, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	59.8	Suburban
Unconditioned*	0.0	<b>NatHERS climate zone</b>
<b>Total</b>	<b>59.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

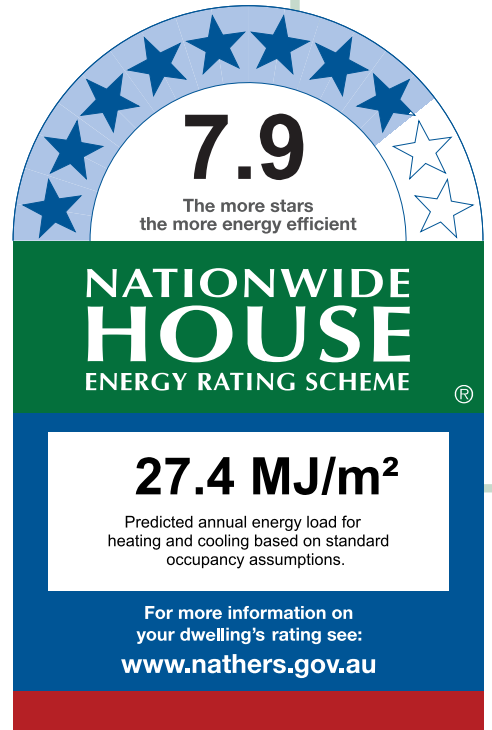
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>9.4</b>	<b>18.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-1Z1Z0D-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	STG-002-01 A	W01-r	1800	2400	Awning	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	STG-005-02 A	W05-I	2700	2400	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W02	2700	2220	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3023	N		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3173	E	8877	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2923	N	3152	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	72.9	2.00
INT-PB	Internal Plasterboard Stud Wall	27.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile
Bathroom	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
Bedroom 03	CSOG-200: Concrete Slab on Ground (200mm)	0.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	33.3	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	1.8	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.4	N/A	0.00	Tile
Study	CSOG-200: Concrete Slab on Ground (200mm)	2.4	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



## Ceiling penetrations\*

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-T9NKZZ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 207, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	71.0	Suburban
Unconditioned*	4.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

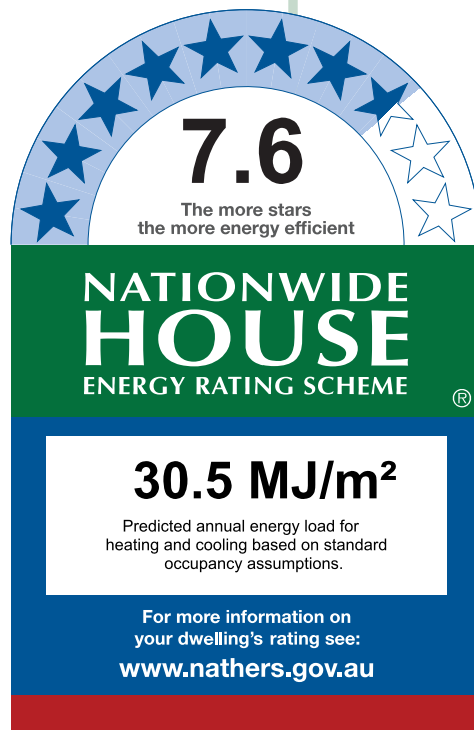
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>8.1</b>	<b>22.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-T9NKZZ-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01	1800	1500	Awning	28	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W02	1800	1500	Awning	28	E	None
Kitchen/Living	STG-005-02 A	W04	2700	1935	Sliding	45	N	None
Kitchen/Living	STG-005-02 A	W05	2700	1200	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W03	1800	1500	Awning	28	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2519	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3598	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3069	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2498	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5673	N	2207	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5398	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	943	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	37.5	2.00
INT-PB	Internal Plasterboard Stud Wall	54.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.7	N/A	0.00	Tile
Bedroom 01	CSOG-200: Concrete Slab on Ground (200mm)	11.4	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.2	N/A	0.00	Tile
Bedroom 02	CSOG-200: Concrete Slab on Ground (200mm)	9.7	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	CSOG-200: Concrete Slab on Ground (200mm)	0.1	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.0	N/A	0.00	Tile
Hallway	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.8	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	17.8	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
Hallway	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorbptance	Roof Colour
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## 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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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-TDCKAL-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 208, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	76.5	Suburban
Unconditioned*	4.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>81.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	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](http://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

**33.0 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>16.3</b>	<b>16.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01-o	1800	1200	Awning	90	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	STG-005-02 A	W03-l	2700	2560	Sliding	45	N	None
Bedroom 03	STG-002-01 A	W04-j	1800	2700	Awning	29	E	None
Kitchen/Living	STG-005-02 A	W02-e	2700	2100	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	311	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1905	E	3530	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3429	N	4323	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3176	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1164	S	5171	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2434	E	3530	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	78.8	2.00
INT-PB	Internal Plasterboard Stud Wall	61.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Carpet
Bathroom	CSOG-200: Concrete Slab on Ground (200mm)	0.2	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	14.0	N/A	0.00	Carpet
Bedroom 03	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.4	N/A	0.00	Tile
Ensuite	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.4	N/A	0.00	Tile





## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.5	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	0.5	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.8	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
Bedroom 01	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	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

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Conditioned</b>	a 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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<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-QEXH8P-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 209, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 48.2	Suburban
<b>Unconditioned*</b> 6.0	<b>NatHERS climate zone</b>
<b>Total</b> 54.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

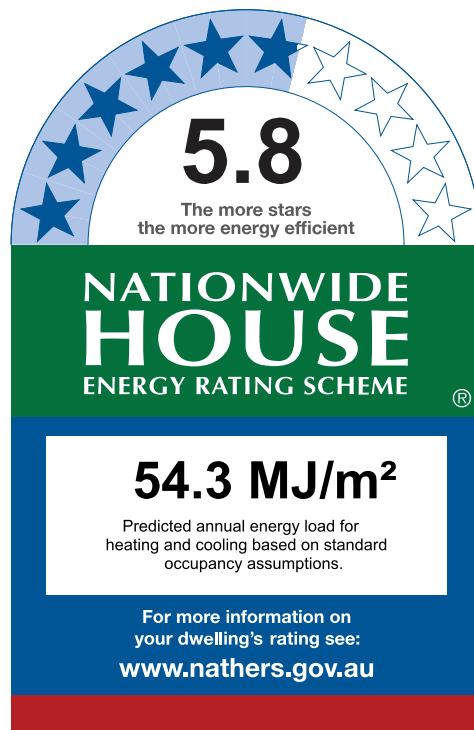
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>35.6</b>	<b>18.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-QEXH8P-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-h-a	2700	2050	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03-f-a	2700	2322	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	STG-005-02 A	W02-g-a	2700	2392	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3074	W	2992	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2880	S	2948	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3622	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2983	N	7630	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	147	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	141	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	58.3	2.00
INT-PB	Internal Plasterboard Stud Wall	21.3	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.8	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



### Ceiling penetrations\*

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

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

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

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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-4APJT0-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 210, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	80.4	Suburban
Unconditioned*	7.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>88.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

**29.1 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>11.1</b>	<b>18.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-4APJT0-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-h	2700	2307	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-m	2700	889	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	STG-005-02 A	W05-j	2700	2400	Sliding	45	W	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	2949	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1440	S	7143	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	W	2949	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	91.6	2.00
INT-PB	Internal Plasterboard Stud Wall	67.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.6	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	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
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-CTV8A8-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 211, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	107.2	Suburban
Unconditioned*	4.0	<b>NatHERS climate zone</b>
<b>Total</b>	<b>111.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

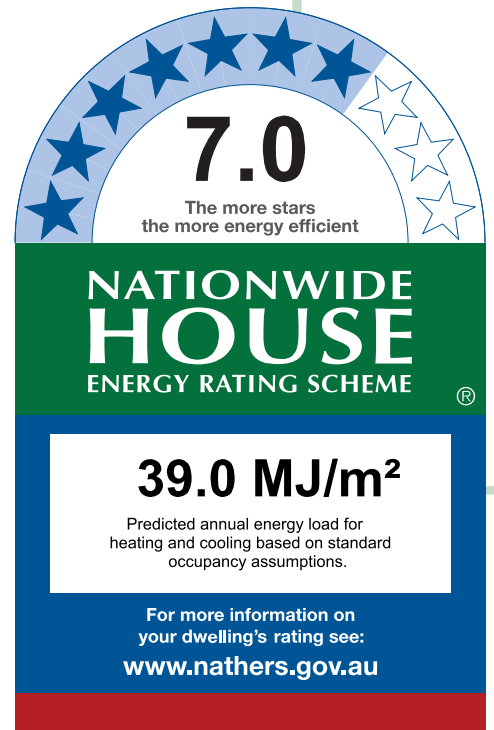
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>26.7</b>	<b>12.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-CTV8A8-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02	1800	2400	Awning	45	E	None

\* Refer to glossary.





## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W03	1800	1200	Awning	90	S	None
Bedroom 02	STG-002-01 A	W04	1800	1200	Awning	90	E	None
Bedroom 02	STG-005-02 A	W01-a-a	2700	1169	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W06	1800	2400	Awning	27	E	None
Kitchen/Living	STG-005-02 A	W05	2700	3410	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

\* Refer to glossary.



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	E	3664	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	S	1868	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1693	E	6944	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2205	S	5283	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3030	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	241	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	360	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3641	E	47	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	312	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6499	N	5198	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	80.5	2.00
INT-PB	Internal Plasterboard Stud Wall	88.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	N/A	0.00	Tile
Bathroom	CSOG-200: Concrete Slab on Ground (200mm)	0.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.8	N/A	0.00	Carpet
Bedroom 01	CSOG-200: Concrete Slab on Ground (200mm)	10.4	N/A	0.00	Carpet

\* Refer to glossary.



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	CSOG-200: Concrete Slab on Ground (200mm)	10.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.2	N/A	0.00	Tile
Ensuite	CSOG-200: Concrete Slab on Ground (200mm)	3.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.7	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	48.8	N/A	0.00	Tile
Laundry	CSOG-200: Concrete Slab on Ground (200mm)	1.9	N/A	0.00	Tile
Linen	CSOG-200: Concrete Slab on Ground (200mm)	5.8	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
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	3	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	7	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Linen	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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently 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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<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-E8QL0E-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 212, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	82.7	Suburban
Unconditioned*	3.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>85.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

**44.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>27.2</b>	<b>17.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-E8QL0E-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.

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

### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-002-01 A	W01	2700	1200	Awning	60	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	STG-005-02 A	W05-k	2700	2400	Sliding	45	E	None
Bedroom 03	STG-002-01 A	W02-f	600	1200	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W04-a-a	2700	2479	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W06-a-a	600	900	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W03-a-a	2700	3412	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

\* Refer to glossary.



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1900	E	6011	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2985	E	2888	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3008	S	1995	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4008	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5339	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5545	N	4655	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	68.0	2.00
INT-PB	Internal Plasterboard Stud Wall	71.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	17.0	N/A	0.00	Tile
Bedroom 03	CSOG-200: Concrete Slab on Ground (200mm)	0.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Tile
Ensuite	CSOG-200: Concrete Slab on Ground (200mm)	0.2	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.5	N/A	0.00	Tile
Entry	CSOG-200: Concrete Slab on Ground (200mm)	0.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	33.0	N/A	0.00	Tile

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	N/A	0.00	Tile
Linen	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Linen	CSOG-200: Concrete Slab on Ground (200mm)	0.3	N/A	0.00	Tile
Study/Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Study/Entry	CSOG-200: Concrete Slab on Ground (200mm)	0.2	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
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Linen	1	Downlight	100	Sealed
Study/Entry	2	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

\* Refer to glossary.



## 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-2LC8C8-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

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**Lot/DP**

**NCC Class\*** 2

**Type** New

### Plans

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**Prepared by** Rothe Lowman

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### Accredited assessor

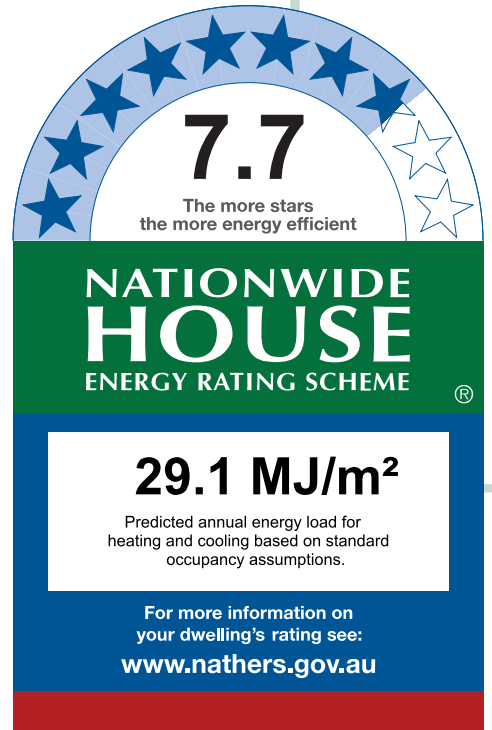
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
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### Thermal Performance

**Heating**      **Cooling**

**14.1**            **15.0**

MJ/m<sup>2</sup>            MJ/m<sup>2</sup>

### About the rating

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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
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-005-02 A	W02-b-a	2700	2190	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*
Bedroom 02	STG-002-01 A	W03-m	1800	1101	Awning	90	W	None
Kitchen/Living	STG-005-02 A	W01-i-a	2700	2781	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3009	W	2263	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3757	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1639	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4006	E	2772	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	97.8	2.00
INT-PB	Internal Plasterboard Stud Wall	52.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	31.8	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile

## Ceiling type

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

## Ceiling penetrations\*

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



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	4	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	100	Sealed
Entry	2	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

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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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-JECWQ8-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 214, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 49.5	Suburban
<b>Unconditioned*</b> 5.5	<b>NatHERS climate zone</b>
<b>Total</b> 55.0	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>17.8</b>	<b>21.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-JECWQ8-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W03-b-a	2700	2026	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	STG-005-02 A	W05-b-a	2700	3000	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W01-q	2700	2313	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W02-o	600	1060	Awning	90	S	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2996	W	3018	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3602	W	8	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3007	N	3003	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2187	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.3	2.00
INT-PB	Internal Plasterboard Stud Wall	23.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	36.4	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



## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	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-MNKVNC-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 215, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	69.0	Suburban
Unconditioned*	6.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

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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](http://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/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>29.3</b>	<b>16.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-MNKVNC-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-c-a	2700	1085	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-b-a	2700	2212	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	STG-005-02 A	W03-c-a	2700	2410	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W01-g	2700	1800	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1369	W	5485	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	2205	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3112	S	1282	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4034	W	28	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1954	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2177	S	4980	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	62.4	2.00
INT-PB	Internal Plasterboard Stud Wall	49.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	37.7	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
----------	----------	------	---------------	------------------

\* Refer to glossary.

## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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

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

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-SBY7AJ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 216, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	76.9	Suburban
Unconditioned*	3.9	<b>NatHERS climate zone</b>
<b>Total</b>	<b>80.7</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

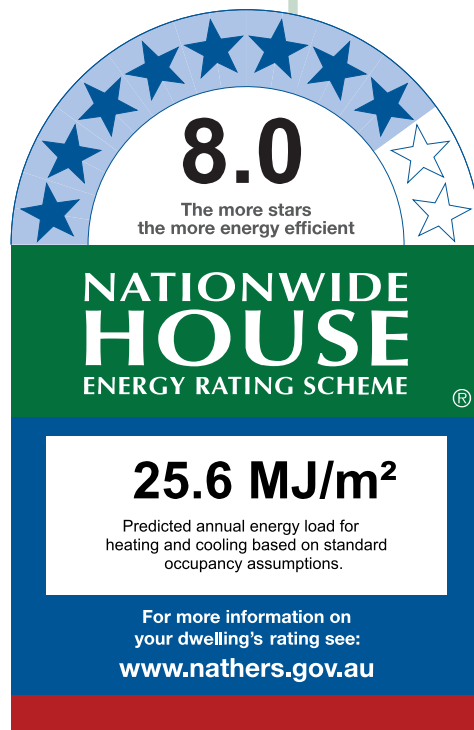
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>9.6</b>	<b>16.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-c-a	2700	1157	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*
Bedroom 02	STG-002-01 A	W03-p	1800	1101	Awning	90	W	None
Kitchen/Living	STG-005-02 A	W02-h-a	2700	2700	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4081	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3051	W	2015	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1652	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	323	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3951	E	2757	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	100.4	2.00
INT-PB	Internal Plasterboard Stud Wall	47.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.5	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.8	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
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\* Refer to glossary.



## Ceiling penetrations\*

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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-39O2D1-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 217, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	106.6	Suburban
Unconditioned*	4.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>110.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

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

**7.8**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**28.5 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

**Heating**      **Cooling**

**19.1**            **9.4**  
MJ/m<sup>2</sup>            MJ/m<sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-39O2D1-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-m-a	2700	2300	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	STG-002-01 A	W06-d-a	600	1200	Awning	90	S	None
Bedroom 02	STG-005-02 A	W02-l-a	2700	1191	Sliding	45	E	None
Bedroom 03	STG-005-02 A	W05-e-a	2700	1142	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W04-f-a	2700	2401	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W03-i-a	2700	3163	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2973	E	2927	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3257	S	2561	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2445	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1686	E	6346	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3018	E	5897	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3584	S	2737	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4007	E	5632	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5934	N	5165	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	260	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1271	S	2770	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	548	E	6347	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	71.6	2.00
INT-PB	Internal Plasterboard Stud Wall	82.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	19.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.6	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	52.7	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	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	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	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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\* 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

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-CA0EDG-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 218, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	80.9	Suburban
Unconditioned*	7.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>88.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>10.0</b>	<b>18.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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-CA0EDG-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



\* Refer to glossary.

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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.

### Genuine certificate

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

### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-k-a	2700	2053	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W04-d-a	1800	1060	Awning	90	W	None
Kitchen/living	STG-005-02 A	W02-j-a	2700	2390	Sliding	45	E	None
Kitchen/living	STG-002-01 A	W03-g-a	1800	3348	Awning	30	N	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

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

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2630	E	5646	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1573	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4078	E		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	2810	S	6190	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5151	N	2514	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	82.9	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Bedroom 01	CSOG-200: Concrete Slab on Ground (200mm)	0.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.1	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.5	N/A	0.00	Tile
Kitchen/living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	33.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.3	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	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
Entry	1	Downlight	100	Sealed
Kitchen/living	4	Downlight	100	Sealed
Kitchen/living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.



## Explanatory Notes

### About this report

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

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

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## Glossary

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<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-2VDX0F-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 219, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	45.7	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

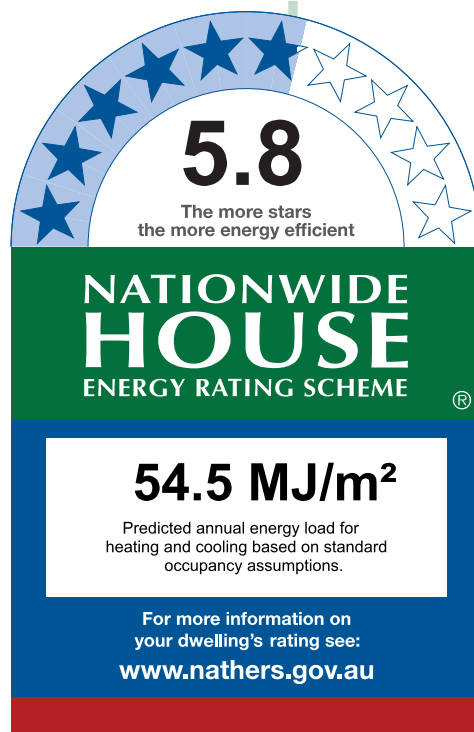
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>33.4</b>	<b>21.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and 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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## Certificate Check

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

### Genuine certificate

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

### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-005-02 A	W03-h-a	2700	2136	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*
Bedroom 02	STG-002-01 A	W02-k-a	600	1200	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W01-l-a	2700	2808	Sliding	45	W	None
Study	STG-005-02 A	W04-e-a	2700	778	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 <sup>2</sup> )	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*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3008	W	2315	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3727	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4426	W	2321	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3136	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	1891	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	41.7	2.00
INT-PB	Internal Plasterboard Stud Wall	28.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.8	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	28.5	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	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

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-V3R9W9-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 220, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 96.7	Suburban
<b>Unconditioned*</b> 4.7	<b>NatHERS climate zone</b>
<b>Total</b> 101.4	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

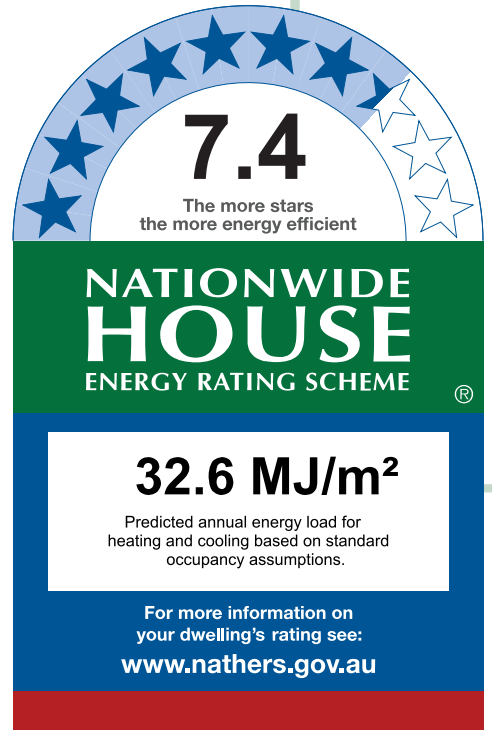
**Declaration of interest** No Conflict of Interest

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



### Thermal Performance

Heating	Cooling
<b>19.4</b>	<b>13.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02-d-a	2700	995	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W03-d-a	2700	1109	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*
Bedroom 03	ALM-001-01 A	W01-e-a	2700	1193	Casement	90	E	None
Kitchen/Living	STG-005-02 A	W01-d-a	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)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2936	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1627	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1644	E	4789	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2813	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1994	S	1869	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	86.3	2.00
INT-PB	Internal Plasterboard Stud Wall	84.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.3	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	14.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.3	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
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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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	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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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
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<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-23UO4Y-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 221, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	58.5	Suburban
Unconditioned*	6.8	<b>NatHERS climate zone</b>
Total	65.2	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

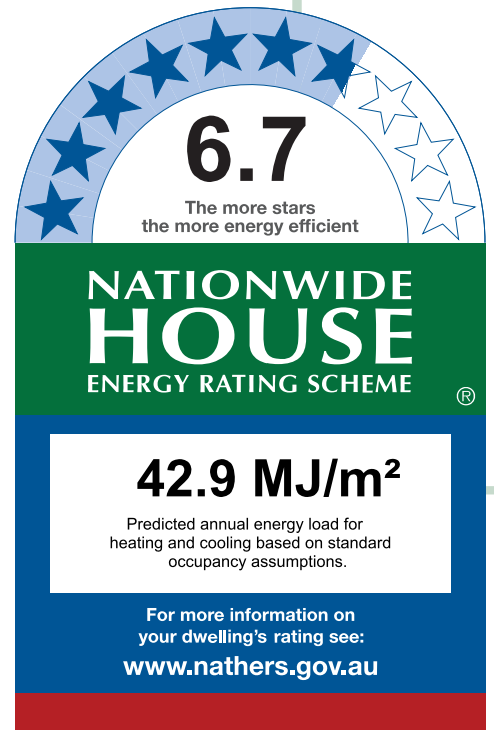
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>13.4</b>	<b>29.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-23UO4Y-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02-i-a	2700	2029	Sliding	45	E	None
Kitchen?living	STG-005-02 A	W04-c-a	2700	2643	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	STG-005-02 A	W01	2700	2700	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.50	Yes



## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3066	E	3110	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4490	N		Yes
Kitchen?living	HEBEL-100-REFL-CAV1	2740	3933	E	91	Yes
Kitchen?living	HEBEL-100-REFL-CAV1	2740	3019	N	3264	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.3	2.00
INT-PB	Internal Plasterboard Stud Wall	36.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.8	N/A	0.00	Tile
Kitchen?living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	25.9	N/A	0.00	Tile
Living 6	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.7	N/A	0.00	Carpet
Living 7	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.1	N/A	0.00	Carpet

## Ceiling type

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

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	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
Living 6	1	Downlight	100	Sealed
Living 7	2	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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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-6ZE3NZ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 222, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	100.0	Suburban
Unconditioned*	3.9	<b>NatHERS climate zone</b>
<b>Total</b>	<b>103.9</b>	<b>56 - Mascot AMO</b>
Garage	0.0	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

**40.7 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>23.8</b>	<b>16.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

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## Certificate Check

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

### Genuine certificate

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

### Ceiling penetrations\*

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-j	1800	2100	Awning	27	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	STG-002-01 A	W05-m	1800	2100	Awning	27	S	None
Bedroom 03	STG-005-02 A	W04-p	2700	2400	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W01-t	1800	2700	Awning	27	E	None
Kitchen/Living	STG-005-02 A	W02-r	2700	2100	Sliding	45	S	None
Study	ALM-001-01 A	W03-q	2700	1200	Casement	72	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	S	2313	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S	2313	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3599	S	2313	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3006	E	2672	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2646	S	8430	Yes
Study	HEBEL-100-REFL-CAV1	2740	2900	E	2672	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.0	2.00
INT-PB	Internal Plasterboard Stud Wall	92.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.0	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	39.7	N/A	0.00	Tile



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.6	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	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	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
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorbptance	Roof Colour
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\* Refer to glossary.





## Roof type

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

## Explanatory Notes

### About this report

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

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

### 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-HXZR4E-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 223, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	46.5	Suburban
Unconditioned*	6.0	<b>NatHERS climate zone</b>
Total	52.6	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

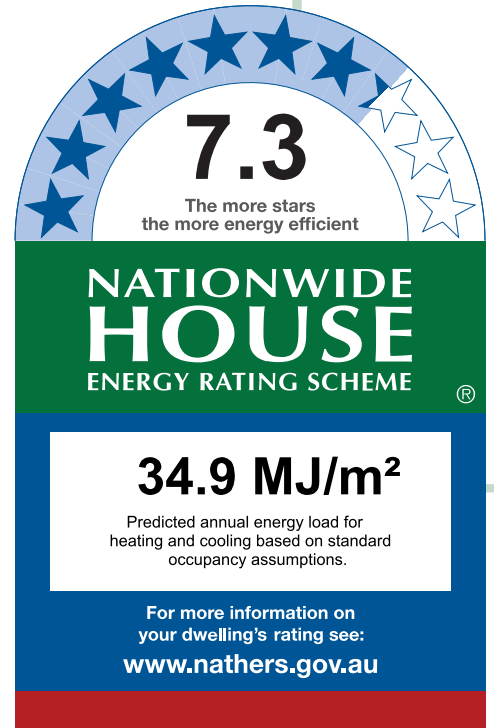
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>18.4</b>	<b>16.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-f	2700	1945	Sliding	45	S	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-01 A	W02-s	2700	976	Casement	90	W	None
Kitchen/Living	STG-002-01 A	W03-k	1800	2400	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3112	S	3362	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1804	W	6417	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3705	S	1635	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	678	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.3	2.00
INT-PB	Internal Plasterboard Stud Wall	22.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.8	N/A	0.00	Tile
Bathroom	CSOG-200: Concrete Slab on Ground (200mm)	0.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.5	N/A	0.00	Carpet
Bedroom 01	CSOG-200: Concrete Slab on Ground (200mm)	3.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.0	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	0.4	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
Bedroom 01	2	Downlight	100	Sealed



### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

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

\* Refer to glossary.

## Explanatory Notes

### About this report

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-YEOQN7-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 224, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 46.6	Suburban
<b>Unconditioned*</b> 6.0	<b>NatHERS climate zone</b>
<b>Total</b> 52.5	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

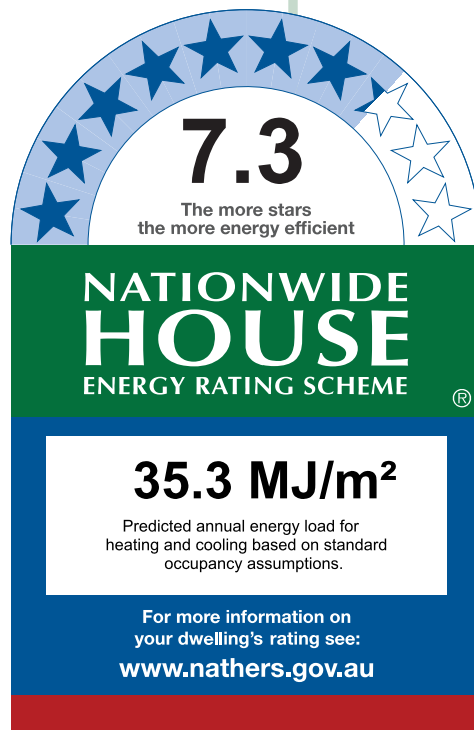
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>17.5</b>	<b>17.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-YEOQN7-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-b-a	2700	1945	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	STG-002-01 A	W03-e-a	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-001-01 A	W02-a-a	2700	932	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3111	S	3340	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3704	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1782	E	6417	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.0	2.00
INT-PB	Internal Plasterboard Stud Wall	25.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.7	N/A	0.00	Tile
Bathroom	CSOG-200: Concrete Slab on Ground (200mm)	0.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.5	N/A	0.00	Carpet
Bedroom 01	CSOG-200: Concrete Slab on Ground (200mm)	3.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.0	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	0.4	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
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed

\* Refer to glossary.



### Ceiling penetrations\*

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

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-XN1HCV-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 225, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	70.3	Suburban
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>74.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

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

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>42.8</b>	<b>15.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-XN1HCV-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01-p	1800	2400	Awning	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 01	STG-005-02 A	W05	2700	1800	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W02-n	2700	2815	Sliding	45	S	None
Kitchen/Living	STG-005-02 A	W03-n	1800	1500	Sliding	45	W	None
Study	STG-005-02 A	W04-n	1800	1500	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3446	S		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3386	W	3963	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1615	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1588	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3974	S	3459	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3931	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	3571	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	2976	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	37.2	2.00
INT-PB	Internal Plasterboard Stud Wall	57.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.2	N/A	0.00	Carpet
Bedroom 01	CSOG-200: Concrete Slab on Ground (200mm)	5.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Ensuite	CSOG-200: Concrete Slab on Ground (200mm)	0.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.1	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	4.1	N/A	0.00	Carpet
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Carpet
Laundry	CSOG-200: Concrete Slab on Ground (200mm)	0.2	N/A	0.00	Carpet
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.6	N/A	0.00	Carpet
Study	CSOG-200: Concrete Slab on Ground (200mm)	0.4	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
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorbptance	Roof Colour
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\* Refer to glossary.



## Roof type

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

## Explanatory Notes

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

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

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<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently 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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<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-4GEJCY-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 226, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 68.2	Suburban
<b>Unconditioned*</b> 4.0	<b>NatHERS climate zone</b>
<b>Total</b> 72.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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

**8.8**  
The more stars  
the more energy efficient

**NATIONWIDE  
HOUSE**  
ENERGY RATING SCHEME

**16.8 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>3.8</b>	<b>13.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-4GEJCY-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02-m-a	1800	1015	Awning	90	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 01	STG-005-02 A	W01-n-a	2700	1945	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-g-a	2700	1760	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03-j-a	2700	2807	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3133	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1313	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1736	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1693	E	3117	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	3879	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3694	S	13260	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3959	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3827	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	658	E	3082	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	29.7	2.00
INT-PB	Internal Plasterboard Stud Wall	46.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	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
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			

## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-A3V43W-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 227, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.9	Suburban
Unconditioned*	4.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

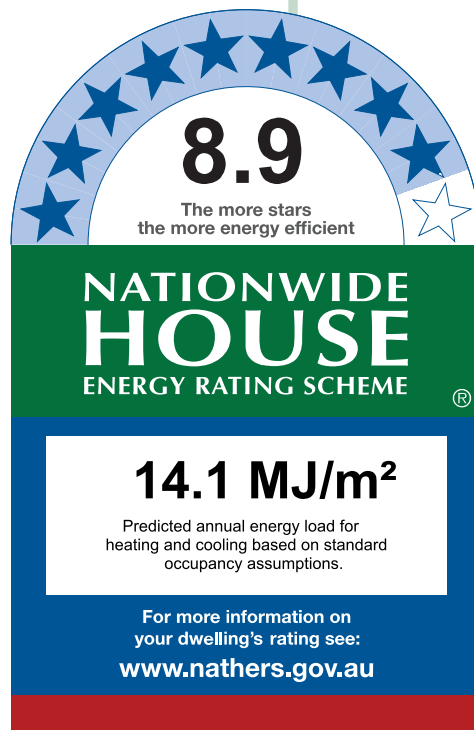
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>0.1</b>	<b>14.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-A3V43W-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-c-a	2700	1850	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	STG-002-01 A	W01-j-a	1800	1022	Awning	90	N	None
Kitchen/Living	STG-005-02 A	W05-d-a	2700	1654	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2990	N	2983	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3612	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1910	W	3067	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.1	2.00
INT-PB	Internal Plasterboard Stud Wall	21.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	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
None			

\* Refer to glossary.



## Explanatory Notes

### About this report

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

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

### Accredited assessors

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

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

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

### Disclaimer

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

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

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

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

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-K1LKWY-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 228, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	72.2	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>76.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

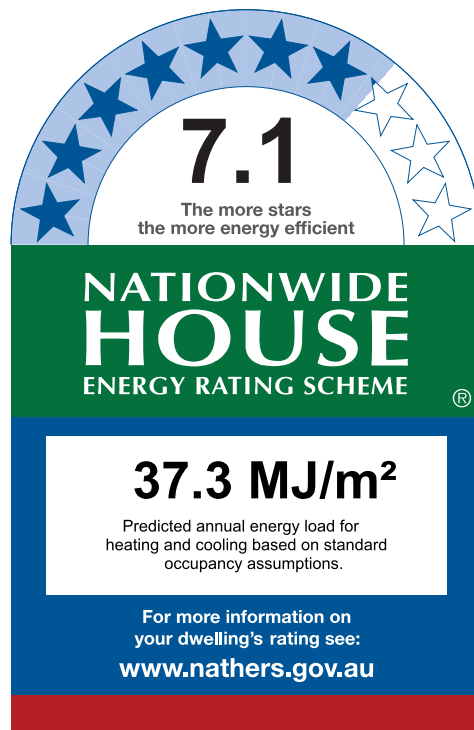
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 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
<b>24.4</b>	<b>12.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W04	600	1200	Awning	90	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 02	ALM-002-01 A	W03	2700	2700	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02	2700	1906	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	2351	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4943	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	327	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2966	W	2254	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3675	N		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2078	W	2255	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1597	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2227	N	5351	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2404	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	53.2	2.00
INT-PB	Internal Plasterboard Stud Wall	41.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	14.6	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	4.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.4	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.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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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-5T8SR9-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 229, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	72.0	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

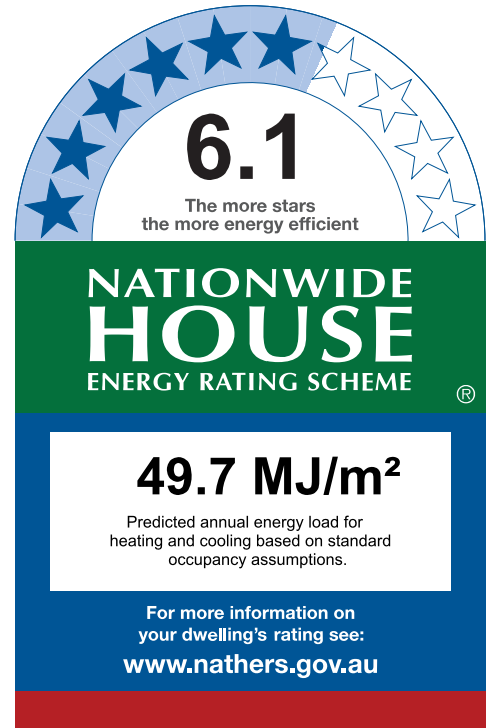
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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

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

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



### Thermal Performance

Heating	Cooling
<b>34.6</b>	<b>15.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-5T8SR9-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01	1800	2400	Awning	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W04	2700	2390	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03	2700	2475	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W02	1800	950	Awning	90	E	None
Kitchen/Living	ALM-001-01 A	W05	1800	950	Awning	90	E	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

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

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	12	S		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4664	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2965	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	E	3329	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1605	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	S	3747	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3983	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.1	2.00
INT-PB	Internal Plasterboard Stud Wall	46.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.9	N/A	0.00	Tile

\* 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
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

## 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

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-I0XE2V-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 230, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	61.0 Suburban
Unconditioned*	2.5 NatHERS climate zone
Total	63.6 56 - Mascot AMO
Garage	0.0



### Accredited assessor

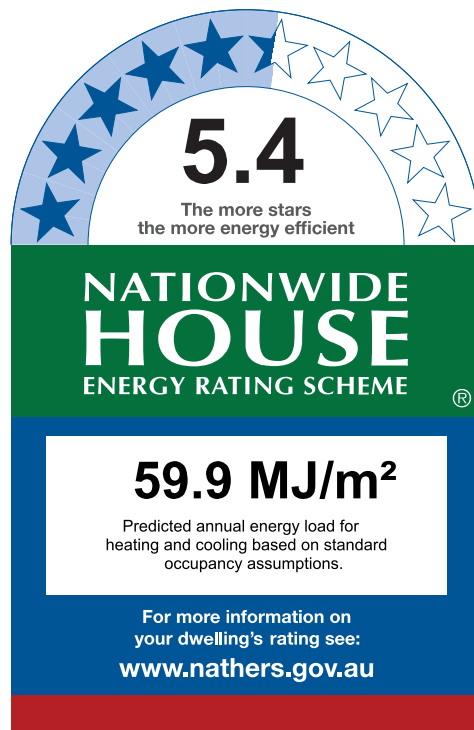
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

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



### Thermal Performance

Heating	Cooling
<b>43.3</b>	<b>16.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-I0XE2V-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	2095	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-001-01 A	W01	1800	2400	Awning	45	E	None
Kitchen/Living	ALM-002-01 A	W02	2700	2021	Sliding	45	S	None
Study	ALM-002-01 A	W04	2700	900	Awning	60	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 <sup>2</sup> )	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*



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	1587	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3048	E	2536	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3602	S	1216	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3585	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2552	S	4379	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	N	3986	Yes
Study	HEBEL-100-REFL-CAV1	2740	2868	S		Yes
Study	HEBEL-100-REFL-CAV1	2740	1164	E	6266	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	39.4	2.00
INT-PB	Internal Plasterboard Stud Wall	46.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.00	Tile
Storage	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.0	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.9	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	2	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.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-V9U4N6-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 231, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	45.2 Suburban
Unconditioned*	4.1 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](http://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

**48.5 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>29.9</b>	<b>18.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-V9U4N6-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	2400	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W02	1800	2400	Awning	45	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	1878	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3270	N	2677	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3175	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6901	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2329	E	3942	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	571	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	42.9	2.00
INT-PB	Internal Plasterboard Stud Wall	21.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.3	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	100	Sealed
Bedroom 01	2	Downlight	100	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
None			

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-WELJV8-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 232, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	71.0	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.3</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

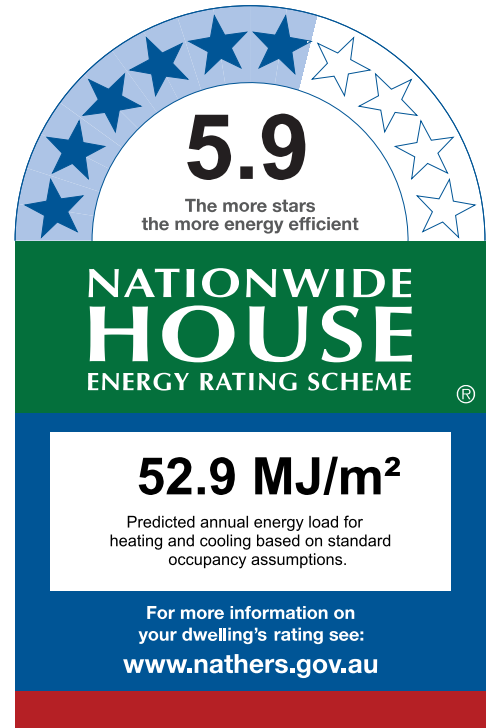
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>31.4</b>	<b>21.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W04	2700	2186	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	W03	2700	1966	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01	2700	3586	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W05	1800	2400	Awning	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

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

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3014	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	408	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2977	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	714	E	8254	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8139	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4003	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.1	2.00
INT-PB	Internal Plasterboard Stud Wall	47.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.8	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	3.7	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.4	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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## 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	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

\* Refer to glossary.

## Explanatory Notes

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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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<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-MRMJUP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 233, 4 Delmar Parade, DEE WHY, NSW,  
2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

## Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

## Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	68.9	Suburban
Unconditioned*	3.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>72.5</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

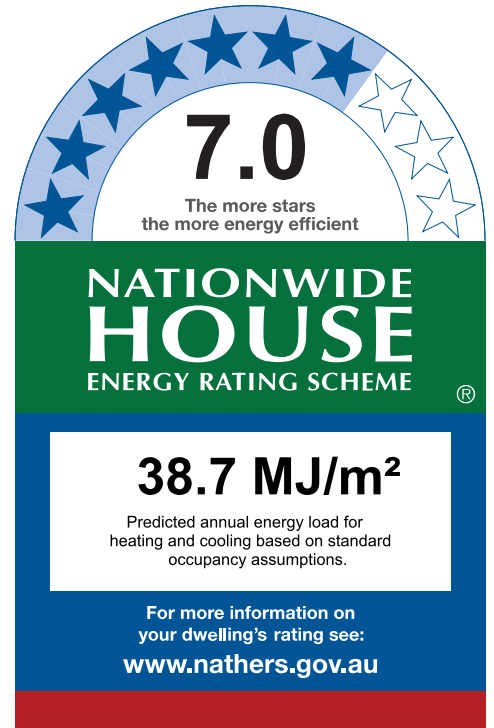
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

## National Construction Code (NCC) requirements

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

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

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



## Thermal Performance

Heating	Cooling
<b>20.4</b>	<b>18.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

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

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-MRMJUP-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W03	1800	2400	Awning	27	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-001-01 A	W02	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01	2700	2731	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2996	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	388	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2962	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1249	W	4031	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3987	S	3207	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	73.0	2.00
INT-PB	Internal Plasterboard Stud Wall	42.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	14.3	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	3.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.4	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

\* 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
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

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

\* Refer to glossary.

## Explanatory Notes

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# Nationwide House Energy Rating Scheme NatHERS Certificate No. #HR-W7UJRV-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 234, 4 Delmar Parade, DEE WHY, NSW,  
2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

## Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

## Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	70.4	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>74.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

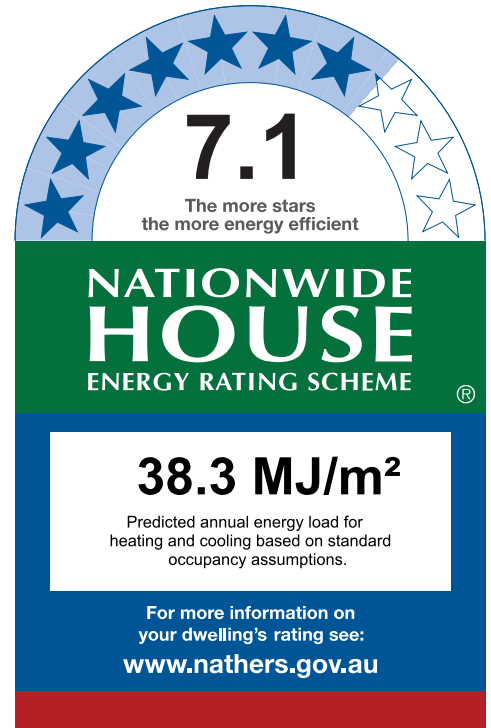
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

## National Construction Code (NCC) requirements

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## Thermal Performance

Heating	Cooling
<b>21.0</b>	<b>17.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

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

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-W7UJRV-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01	1800	2400	Awning	27	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-002-01 A	W02	2700	1066	Fixed	0	S	None
Kitchen/Living	ALM-002-01 A	W03	2700	2773	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes



## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3014	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1588	E	5781	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1753	S	3235	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3861	S	3207	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	71.0	2.00
INT-PB	Internal Plasterboard Stud Wall	60.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.3	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Tile
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	31.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	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

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	3	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
Laundry	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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-RKSS90-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 235, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	69.7 Suburban
Unconditioned*	7.6 NatHERS climate zone
Total	77.3 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](http://www.abcb.gov.au).

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

8.3  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**22.3 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
8.5	13.8
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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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?

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

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

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

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

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

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1139	Awning	60	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-001-01 A	W01	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W08	2700	3110	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1567	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1749	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3055	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	N	2778	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1292	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	96.4	2.00
INT-PB	Internal Plasterboard Stud Wall	47.1	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.6	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.9	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
Hallway	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	38.8	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	2	Downlight	100	Sealed
Bathroom	2	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
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

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

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## Explanatory Notes

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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-5MQV1B-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 236, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	43.7 Suburban
Unconditioned*	5.7 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](http://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

**27.4 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>10.4</b>	<b>17.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-5MQV1B-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	1147	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-01 A	W03	1800	2417	Awning	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	2330	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3069	N	2991	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2709	E	2905	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	4186	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.2	2.00
INT-PB	Internal Plasterboard Stud Wall	31.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	22.1	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	100	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	3	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

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-001NOA-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 237, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	48.3 Suburban
Unconditioned*	4.3 NatHERS climate zone
Total	52.6 56 - Mascot AMO
Garage	0.0



### Accredited assessor

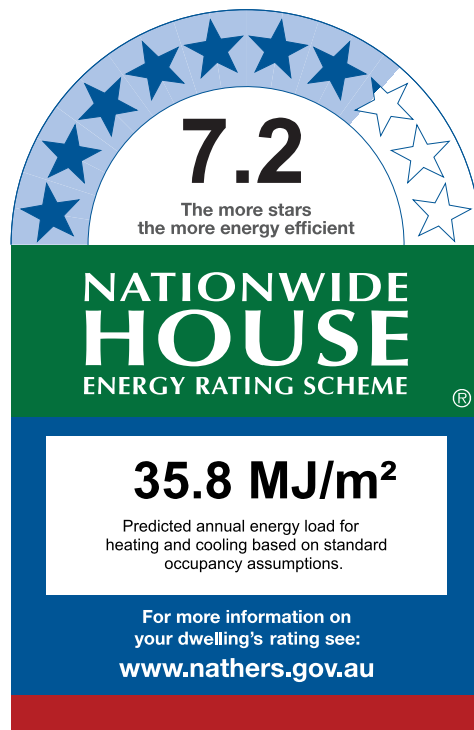
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>15.8</b>	<b>20.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-001NOA-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1217	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-001-01 A	W01	1800	2263	Awning	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3271	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04	600	1200	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2308	N	4377	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3598	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5377	E	2188	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4975	W	3228	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.9	2.00
INT-PB	Internal Plasterboard Stud Wall	22.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.5	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-M3NQEW-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 238, 4 Delmar Parade, DEE WHY, NSW,  
2099

**Lot/DP** 13a/342819

**NCC Class\*** 2

**Type** New

## Plans

**Main Plan** Project No. 221054

**Prepared by** Rothe Lowman

## Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	47.8	Suburban
Unconditioned*	8.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>56.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

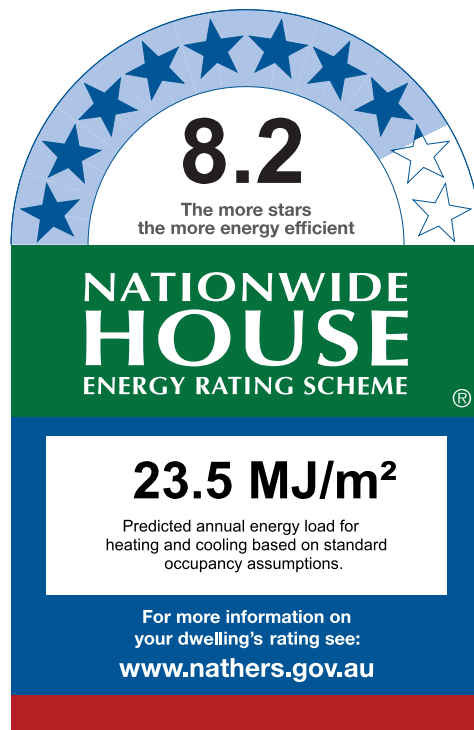
**Declaration of interest** No Conflict of Interest

## National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



## Thermal Performance

Heating	Cooling
<b>9.4</b>	<b>14.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-M3NQEW-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed 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	1155	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1778	W	3809	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	3749	N	2343	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2033	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	76.3	2.00
INT-PB	Internal Plasterboard Stud Wall	20.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
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\* 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) 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.

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## Glossary

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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-67L893-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 239, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	97.2 Suburban
Unconditioned*	3.9 NatHERS climate zone
Total	101.1 56 - Mascot AMO
Garage	0.0



### Accredited assessor

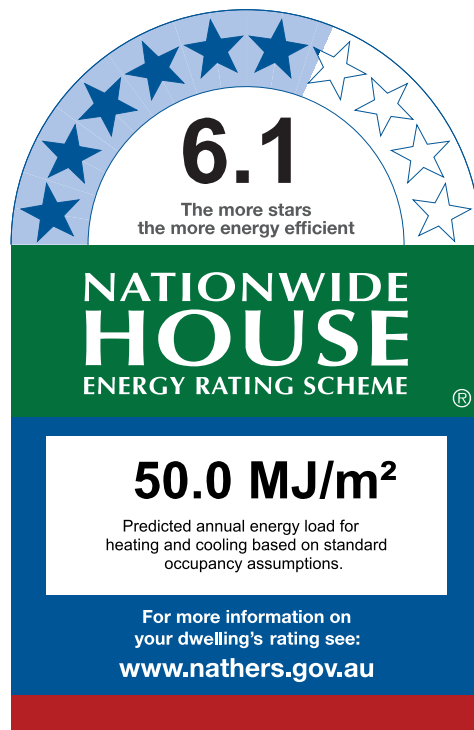
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>27.9</b>	<b>22.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-67L893-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05	2700	2151	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-001-01 A	W03	1800	2400	Awning	27	S	None
Bedroom 03	ALM-001-01 A	W04	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01	2700	4507	Sliding	45	W	None
Kitchen/Living	ALM-001-01 A	W02	1800	2400	Awning	27	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2985	S	2667	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2990	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3027	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2634	E	5936	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5991	W	2692	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6342	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.3	2.00
INT-PB	Internal Plasterboard Stud Wall	64.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.6	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.8	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	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-PFGTLK-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 240, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 44.3	Suburban
<b>Unconditioned*</b> 4.6	<b>NatHERS climate zone</b>
<b>Total</b> 48.9	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

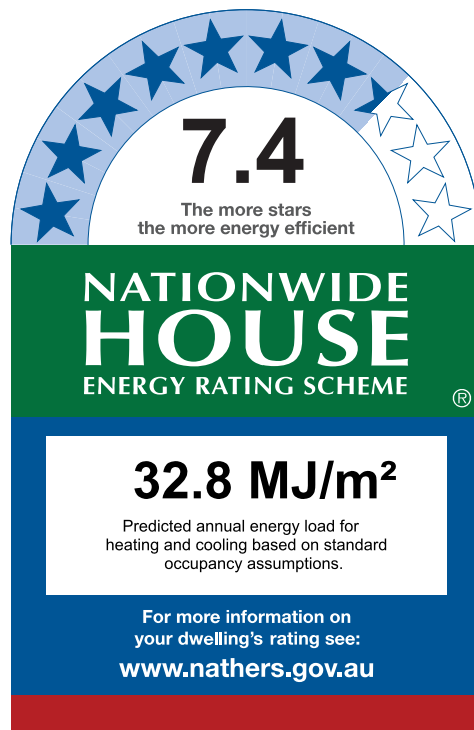
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>18.8</b>	<b>14.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-PFGTLK-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04	2700	1165	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	2700	3340	Sliding	66	N	None
Kitchen/Living	ALM-001-04 A	W02	1800	2381	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2319	W	3599	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4752	N	2257	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1863	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3977	WNW	183	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	56.7	2.00
INT-PB	Internal Plasterboard Stud Wall	24.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.6	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



## Ceiling fans

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.



## Explanatory Notes

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<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.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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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-SO1WZV-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 241, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.9	Suburban
Unconditioned*	4.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 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
<b>17.1</b>	<b>15.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-SO1WZV-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	2100	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-001-04 A	W01	1800	2381	Awning	27	NW	None
Kitchen/Living	ALM-002-01 A	W02	2700	2562	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	614	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2417	W	3648	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4042	NW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4539	N	2504	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3630	S	2842	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	49.7	2.00
INT-PB	Internal Plasterboard Stud Wall	23.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.6	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



## Ceiling fans

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

## 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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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-VMP2WZ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 242, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	81.9	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>87.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

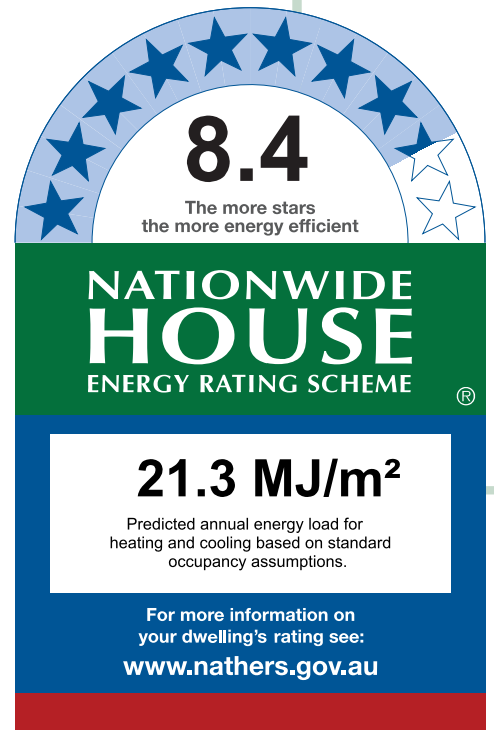
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>9.1</b>	<b>12.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-VMP2WZ-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1500	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-001-01 A	W02	1800	1044	Awning	90	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	2895	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes



## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2505	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	6182	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3901	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3421	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1781	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3839	W	4262	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6532	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	44.2	2.00
INT-PB	Internal Plasterboard Stud Wall	50.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	49.8	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
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\* Refer to glossary.

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-SZSG91-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 243, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	79.2	Suburban
Unconditioned*	6.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>85.5</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

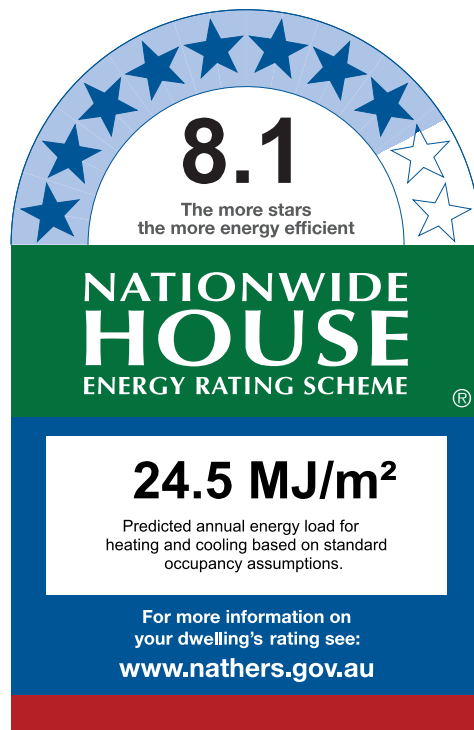
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>13.9</b>	<b>10.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-SZSG91-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03	2700	1081	Awning	60	S	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-001-01 A	W01	1800	1121	Awning	90	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3073	Sliding	45	N	None
Study	ALM-001-01 A	W04	1800	1130	Awning	90	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1623	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3016	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Hallway	HEBEL-100-REFL-CAV1	2740	2117	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3982	N	2771	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1362	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	1938	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	79.1	2.00
INT-PB	Internal Plasterboard Stud Wall	62.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.5	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	9.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Carpet



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
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			

\* 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-7ED5A1-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 244, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	92.1	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>97.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

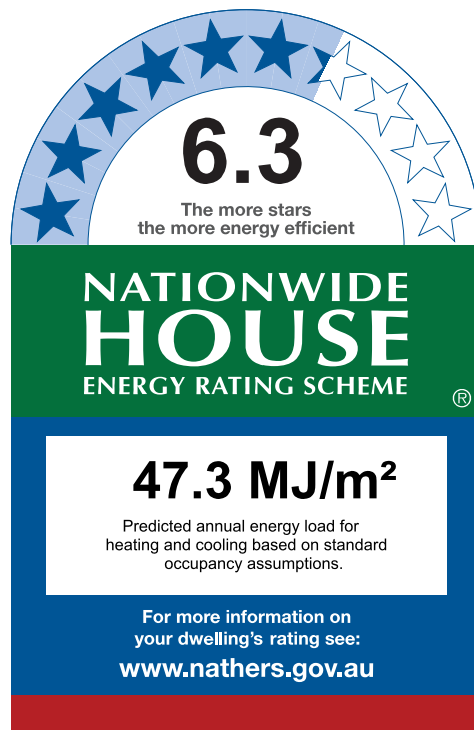
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>30.8</b>	<b>16.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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.

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W07	600	900	Awning	90	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W06	1800	2400	Awning	27	S	None
Bedroom 01	ALM-002-01 A	W05	2700	1799	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02	2700	1800	Sliding	45	E	None
Bedroom 02	ALM-001-01 A	W01	1800	2400	Awning	27	S	None
Bedroom 03	ALM-002-01 A	W03	2700	1500	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04	2700	2724	Sliding	66	S	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation

\* Refer to glossary.

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4848	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3303	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2163	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2582	W	3711	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	E	10103	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3112	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2413	S	3091	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4191	S	2163	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	928	W	2597	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.6	2.00
INT-PB	Internal Plasterboard Stud Wall	64.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.0	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.3	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
----------	----------	---------------

\* 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.

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<b>Assessed floor area</b>	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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<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-PW68QL-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 301, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	71.3	Open
Unconditioned*	5.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>76.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

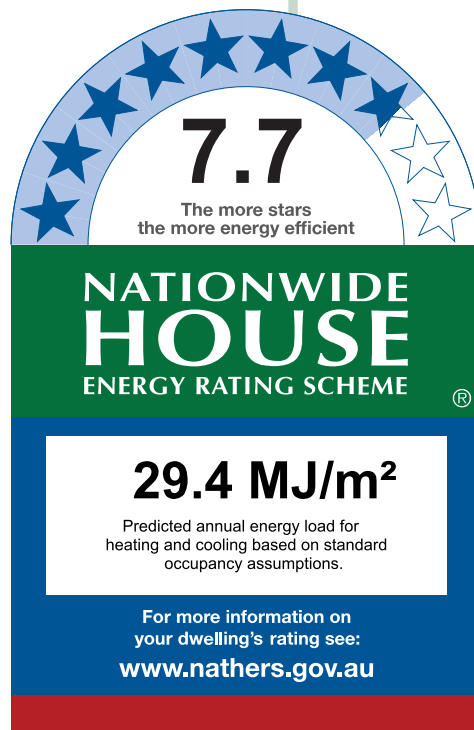
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>20.4</b>	<b>9.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-PW68QL-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-g-a	2700	2100	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 01	STG-002-01 A	W05-i-a	1800	900	Awning	90	W	None
Bedroom 02	STG-002-01 A	W04-l-a	1800	900	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W07-a-a	2700	3155	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2731	N	4663	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3811	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3239	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1608	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	296	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4509	W	2779	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	78.1	2.00
INT-PB	Internal Plasterboard Stud Wall	38.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	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	4.3	N/A	0.00	Tile



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
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
Laundry	1	Downlight	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-CKL16D-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 302, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 47.1	Open
<b>Unconditioned*</b> 4.5	<b>NatHERS climate zone</b>
<b>Total</b> 51.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**8.1**  
The more stars  
the more energy efficient

**NATIONWIDE  
HOUSE**  
ENERGY RATING SCHEME

**25.2 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>12.4</b>	<b>12.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

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## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling’s rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the ‘number’ and ‘type’ of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-a-a-a-a	2700	2400	Sliding	45	W	None

\* Refer to glossary.





## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	STG-002-01 A	W06-b-a-a-a	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-h-a-a-a	2700	2100	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W01-s-a	1800	900	Awning	90	W	None
Kitchen/Living	STG-002-01 A	W02-q-a	1800	895	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3547	W	2718	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	E	3456	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2703	N	3705	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	7647	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2809	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	29.6	2.00
INT-PB	Internal Plasterboard Stud Wall	17.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	11.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-SKLBOM-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 303, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	50.1 Open
Unconditioned*	4.5 NatHERS climate zone
Total	54.6 56 - Mascot AMO
Garage	0.0



### Accredited assessor

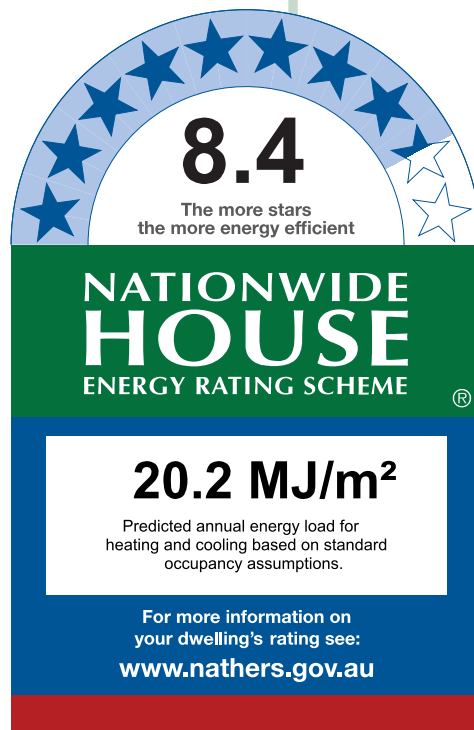
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>12.5</b>	<b>7.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-SKLBOM-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-h-a	2700	2400	Sliding	45	W	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-f-a	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-k-a	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	W	2704	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3308	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	67.6	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

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<b>Conditioned</b>	a 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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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-76NFEC-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 304, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 50.1	Open
<b>Unconditioned*</b> 4.5	<b>NatHERS climate zone</b>
<b>Total</b> 54.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

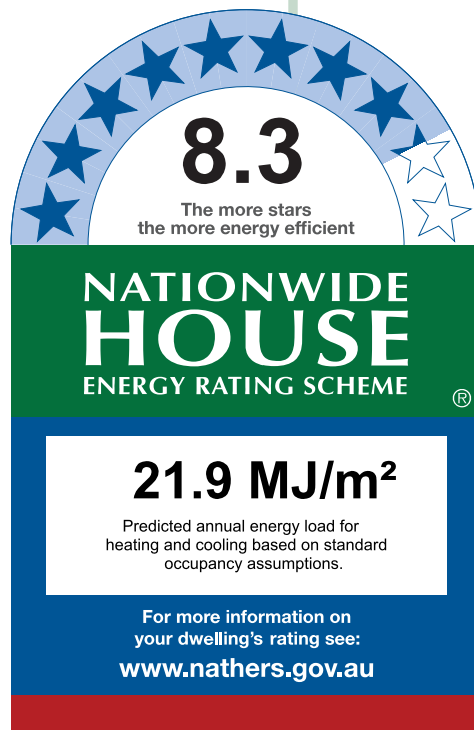
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>12.6</b>	<b>9.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-f-a-a	2700	2400	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-e-a-a	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-i-a-a	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	E	2704	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3308	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	67.1	2.00
INT-PB	Internal Plasterboard Stud Wall	17.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-8HX4P6-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 305, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 48.1	Open
<b>Unconditioned*</b> 4.5	<b>NatHERS climate zone</b>
<b>Total</b> 52.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

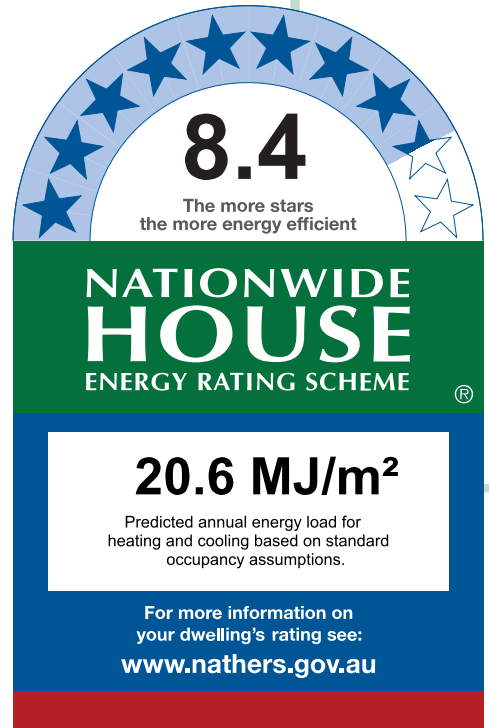
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>12.1</b>	<b>8.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-8HX4P6-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-a-b-a	2700	2400	Sliding	45	W	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-b-b-a	1800	2400	Awning	28	N	None
Kitchen/Living	STG-005-02 A	W04-h-b-a	2700	2100	Sliding	45	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	W	2706	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2900	N	3308	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	320	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	286	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.8	2.00
INT-PB	Internal Plasterboard Stud Wall	18.3	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	11.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.7	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.



## Explanatory Notes

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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-J7GTEZ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 306, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	55.3	Open
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>59.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**8.6**  
The more stars  
the more energy efficient

**NATIONWIDE  
HOUSE**  
ENERGY RATING SCHEME

**18.2 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>8.1</b>	<b>10.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-J7GTEZ-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	STG-002-01 A	W01-r-a	1800	2400	Awning	45	N	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	STG-005-02 A	W05-l-a	2700	2400	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W07-b-a	2700	2190	Sliding	60	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3023	N		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3173	E	8899	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2923	N	3174	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	72.9	2.00
INT-PB	Internal Plasterboard Stud Wall	27.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.1	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 03	2	Downlight	200	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-83CDOW-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 307, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	71.0	Open
Unconditioned*	4.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

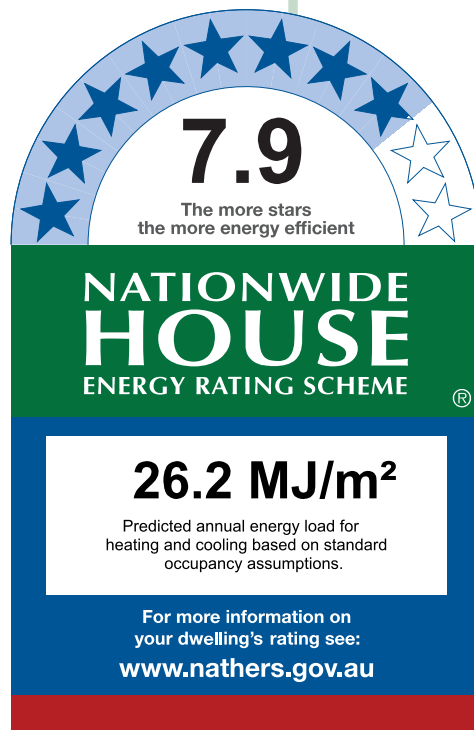
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>5.7</b>	<b>20.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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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Does this Certificate match the one available at the web address or QR code in the verification box on 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01-v	1800	1500	Awning	28	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W02-c	1800	1500	Awning	28	E	None
Kitchen/Living	STG-005-02 A	W04-o	2700	1935	Sliding	45	N	None
Kitchen/Living	STG-005-02 A	W05-g	2700	1200	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W03-o	1800	1500	Awning	28	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2519	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3598	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3069	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2498	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5673	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5398	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	943	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	37.5	2.00
INT-PB	Internal Plasterboard Stud Wall	54.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	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
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-NUM1NG-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 308, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	76.5	Open
Unconditioned*	4.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>81.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

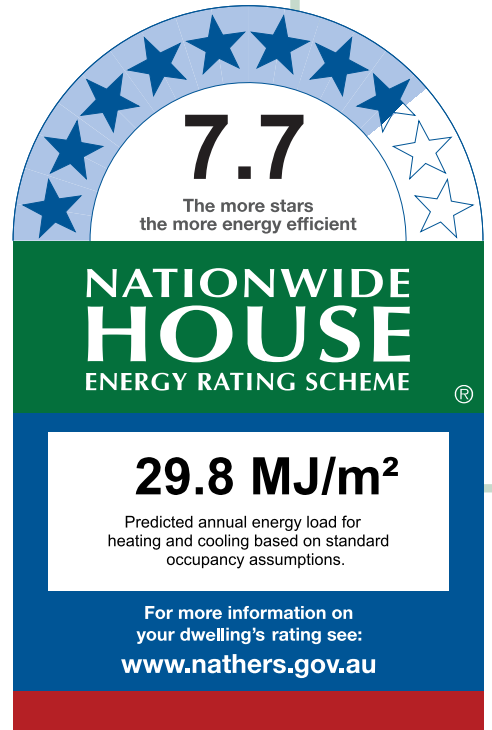
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

## National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



## Thermal Performance

Heating	Cooling
<b>19.3</b>	<b>10.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-NUM1NG-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01-o-a	1800	1200	Awning	90	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	STG-005-02 A	W03-l-a	2700	2560	Sliding	45	N	None
Bedroom 03	STG-002-01 A	W04-j-a	1800	2700	Awning	29	E	None
Kitchen/Living	STG-005-02 A	W02-e-a	2700	2100	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	311	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1905	E	3552	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3429	N	4345	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3176	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1164	S	5193	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2434	E	3552	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	78.8	2.00
INT-PB	Internal Plasterboard Stud Wall	61.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	11.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	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	3.4	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.0	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.8	N/A	0.00	Tile

\* Refer to glossary.

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	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 absorbptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-E4TVMU-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 309, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 48.2	Open
<b>Unconditioned*</b> 6.0	<b>NatHERS climate zone</b>
<b>Total</b> 54.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

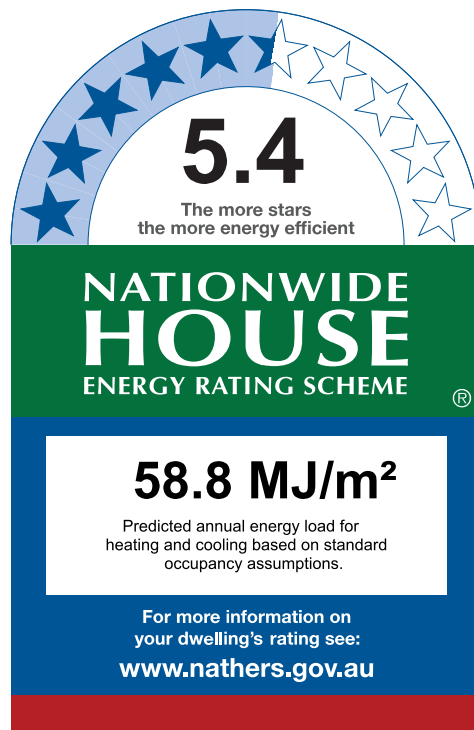
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 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
<b>43.4</b>	<b>15.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-h-a-a	2700	2050	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03-f-a-a	2700	2322	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	STG-005-02 A	W02-g-a-a	2700	2392	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3074	W	3014	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2880	S	2970	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3622	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2983	N	7652	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	147	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	141	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	58.3	2.00
INT-PB	Internal Plasterboard Stud Wall	21.3	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.8	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



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-D4AETM-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 310, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	80.4	Open
Unconditioned*	7.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>88.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

## National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**31.3 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

## Thermal Performance

Heating	Cooling
<b>16.6</b>	<b>14.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-D4AETM-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-h-a	2700	2307	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-m-a	2700	889	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	STG-005-02 A	W05-j-a	2700	2400	Sliding	45	W	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	2971	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1440	S	7165	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	W	2971	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	91.6	2.00
INT-PB	Internal Plasterboard Stud Wall	67.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.6	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	35.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.6	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	0.00	Carpet
bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	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
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
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	2	Downlight	200	Sealed
bathroom	1	Downlight	200	Sealed
bathroom	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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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-WENO9Z-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 311, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 107.2	Open
<b>Unconditioned*</b> 4.0	<b>NatHERS climate zone</b>
<b>Total</b> 111.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

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**7.4**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**32.1 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>22.6</b>	<b>9.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-WENO9Z-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02-p	1800	2400	Awning	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W03-r	1800	1200	Awning	90	S	None
Bedroom 02	STG-002-01 A	W04-q	1800	1200	Awning	90	E	None
Bedroom 02	STG-005-02 A	W01-a-a-a	2700	1169	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W06-i	1800	2400	Awning	27	E	None
Kitchen/Living	STG-005-02 A	W05-n	2700	3410	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	E	3686	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	S	1890	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1693	E	6966	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2205	S	5305	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3030	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	241	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	360	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3641	E	69	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	312	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6499	N	5220	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	80.5	2.00
INT-PB	Internal Plasterboard Stud Wall	88.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	18.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	21.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	0.00	Tile



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	54.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.9	N/A	0.00	Tile
Linen	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	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	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Linen	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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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-KK5PIK-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 312, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 82.7	Open
<b>Unconditioned*</b> 3.2	<b>NatHERS climate zone</b>
<b>Total</b> 85.8	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

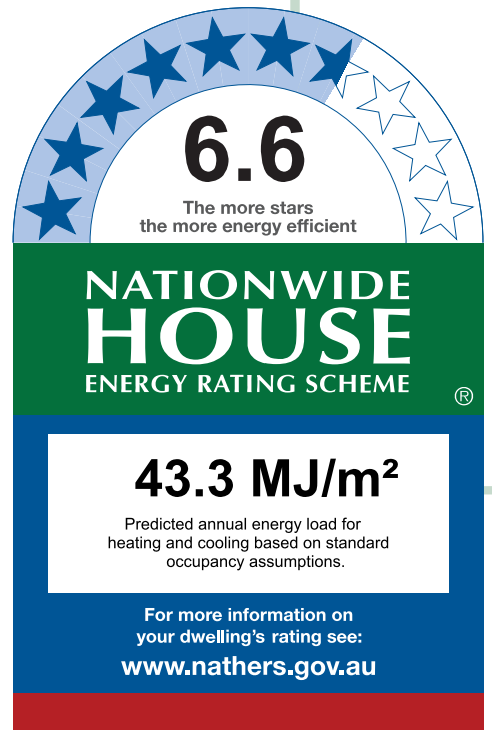
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>32.7</b>	<b>10.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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## 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?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-002-01 A	W01-u	2700	1200	Awning	60	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	STG-005-02 A	W05-k-a	2700	2400	Sliding	45	E	None
Bedroom 03	STG-002-01 A	W02-f-a	600	1200	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W04-a-a-a	2700	2479	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W06-a-a-a	600	900	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W03-a-a-a	2700	3412	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1900	E	6033	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2985	E	2910	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3008	S	2017	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4008	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5339	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5545	N	4677	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	68.0	2.00
INT-PB	Internal Plasterboard Stud Wall	71.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.3	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Tile
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	33.0	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.00	Tile
Linen	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	0.00	Tile
Study/Entry	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
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Linen	1	Downlight	200	Sealed
Study/Entry	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.

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<b>Custom windows</b>	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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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-5AGHB7-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 313, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 74.2	Open
<b>Unconditioned*</b> 3.9	<b>NatHERS climate zone</b>
<b>Total</b> 78.1	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

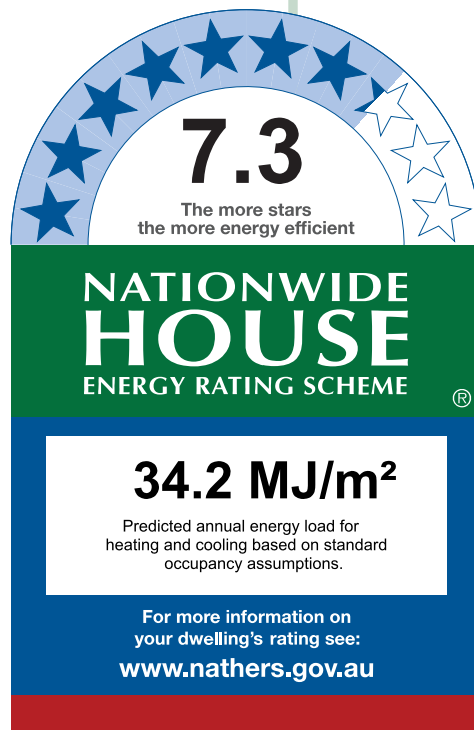
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>21.9</b>	<b>12.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-5AGHB7-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-005-02 A	W02-b-a-a	2700	2190	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*
Bedroom 02	STG-002-01 A	W03-m-a	1800	1101	Awning	90	W	None
Kitchen/Living	STG-005-02 A	W01-i-a-a	2700	2781	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3009	W	2285	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3757	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1639	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4006	E	2794	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	97.8	2.00
INT-PB	Internal Plasterboard Stud Wall	52.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.8	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licenced assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-Q9I8ZC-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 314, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	49.5 Open
Unconditioned*	5.5 NatHERS climate zone
Total	55.0 56 - Mascot AMO
Garage	0.0



### Accredited assessor

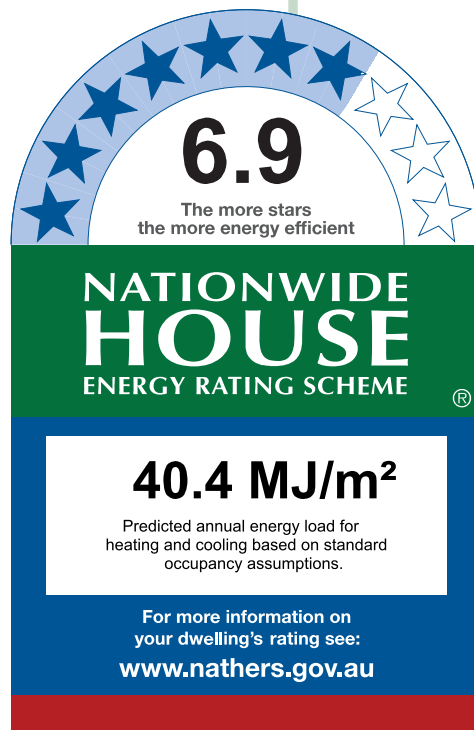
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>24.7</b>	<b>15.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-Q9I8ZC-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W03-b-a-a	2700	2026	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	STG-005-02 A	W05-b-a-a	2700	3000	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W01-q-a	2700	2313	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W02-o-a	600	1060	Awning	90	S	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2996	W	3040	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3602	W	30	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3007	N	3025	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2187	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.3	2.00
INT-PB	Internal Plasterboard Stud Wall	23.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	36.4	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



### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* 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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<b>Conditioned</b>	a 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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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-J65E4N-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 315, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	69.0	Open
Unconditioned*	6.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

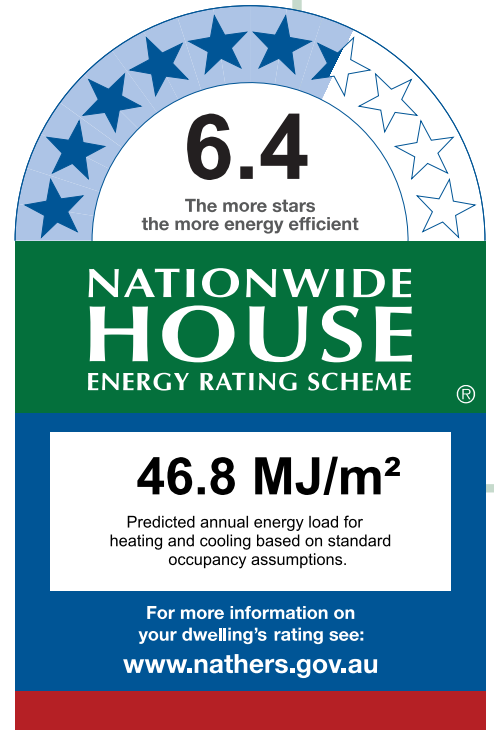
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>34.3</b>	<b>12.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-J65E4N-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-c-a-a	2700	1085	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-b-a-a	2700	2212	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	STG-005-02 A	W03-c-a-a	2700	2410	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W01-g-a	2700	1800	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1369	W	5507	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	2227	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3112	S	1304	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4034	W	50	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1954	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2177	S	5002	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	62.4	2.00
INT-PB	Internal Plasterboard Stud Wall	49.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	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	11.3	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	3.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.7	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
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\* Refer to glossary.





## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

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## Explanatory Notes

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-BZF2L1-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 316, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 76.9	Open
<b>Unconditioned*</b> 3.9	<b>NatHERS climate zone</b>
<b>Total</b> 80.7	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

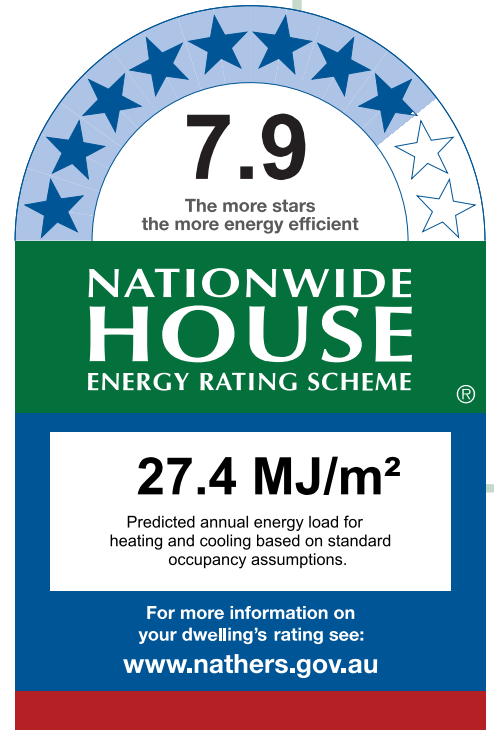
**Declaration of interest** No Conflict of Interest

### 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
<b>14.9</b>	<b>12.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and 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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Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-c-a-a	2700	1157	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*
Bedroom 02	STG-002-01 A	W03-p-a	1800	1101	Awning	90	W	None
Kitchen/Living	STG-005-02 A	W02-h-a-a	2700	2700	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

\* Refer to glossary.

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4081	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3051	W	2037	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1652	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	323	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3951	E	2779	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	100.4	2.00
INT-PB	Internal Plasterboard Stud Wall	47.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	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	12.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	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
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\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Exhaust Fan	350	Sealed
Entry	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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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-YZH70E-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 317, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	106.6 Open
Unconditioned*	4.2 NatHERS climate zone
Total	110.8 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](http://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/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>25.4</b>	<b>7.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-YZH70E-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-m-a-a	2700	2300	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	STG-002-01 A	W06-d-a-a	600	1200	Awning	90	S	None
Bedroom 02	STG-005-02 A	W02-l-a-a	2700	1191	Sliding	45	E	None
Bedroom 03	STG-005-02 A	W05-e-a-a	2700	1142	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W04-f-a-a	2700	2401	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W03-i-a-a	2700	3163	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2973	E	2949	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3257	S	2583	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2445	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1686	E	6368	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3018	E	5919	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3584	S	2759	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4007	E	5654	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5934	N	5187	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	260	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1271	S	2792	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	548	E	6369	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	71.6	2.00
INT-PB	Internal Plasterboard Stud Wall	82.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	19.3	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

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 03	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	7.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	52.7	N/A	0.00	Tile
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
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	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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\* Refer to glossary.



## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

## Explanatory Notes

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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-VIKAQW-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 318, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	80.9	Open
Unconditioned*	7.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>88.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**26.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>15.2</b>	<b>11.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-VIKAQW-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-k-a-a	2700	2053	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W04-d-a-a	1800	1060	Awning	90	W	None
Kitchen/living	STG-005-02 A	W02-j-a-a	2700	2390	Sliding	45	E	None
Kitchen/living	STG-002-01 A	W03-g-a-a	1800	3348	Awning	30	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2630	E	5668	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1573	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4078	E		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	2810	S	6212	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5151	N	2536	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	82.9	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.5	N/A	0.00	Tile
Kitchen/living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/living	4	Downlight	100	Sealed
Kitchen/living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	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) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-DLAB4E-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 319, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	45.7 Open
Unconditioned*	3.8 NatHERS climate zone
Total	49.6 56 - Mascot AMO
Garage	0.0



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**58.2 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>41.6</b>	<b>16.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-005-02 A	W03-h-a-a	2700	2136	Sliding	45	W	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W02-k-a-a	600	1200	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W01-l-a-a	2700	2808	Sliding	45	W	None
Study	STG-005-02 A	W04-e-a-a	2700	778	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3008	W	2337	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3727	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4426	W	2342	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3136	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	1891	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	41.7	2.00
INT-PB	Internal Plasterboard Stud Wall	28.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	11.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	28.5	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	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 absorbance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-VRWABW-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 320, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 96.7	Open
<b>Unconditioned*</b> 4.7	<b>NatHERS climate zone</b>
<b>Total</b> 101.4	56 - Mascot AMO
<b>Garage</b> 0.0	



## Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

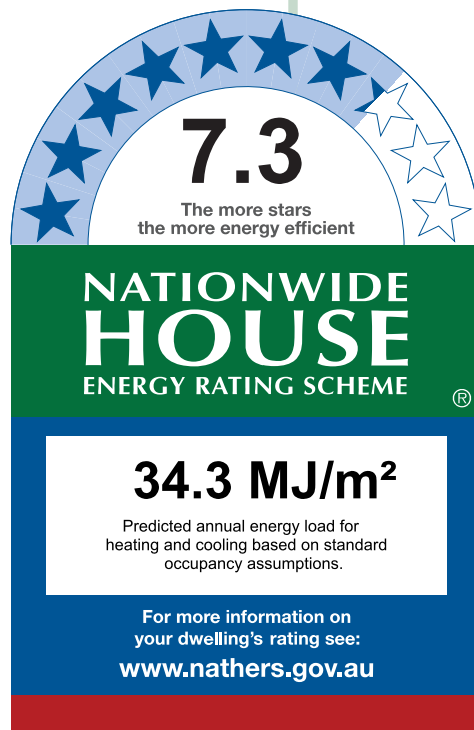
**Declaration of interest** No Conflict of Interest

## National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



## Thermal Performance

Heating	Cooling
<b>23.0</b>	<b>11.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-VRWABW-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02-d-a-a	2700	995	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W03-d-a-a	2700	1109	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*
Bedroom 03	ALM-001-01 A	W01-e-a-a	2700	1193	Casement	90	E	None
Kitchen/Living	STG-005-02 A	W01-d-a-a	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)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2936	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1627	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1644	E	4811	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2835	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1994	S	1891	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	86.3	2.00
INT-PB	Internal Plasterboard Stud Wall	84.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.3	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	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	7.8	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
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.3	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	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	200	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### 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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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-8KQIK1-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 321, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 58.5	Open
<b>Unconditioned*</b> 6.8	<b>NatHERS climate zone</b>
<b>Total</b> 65.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

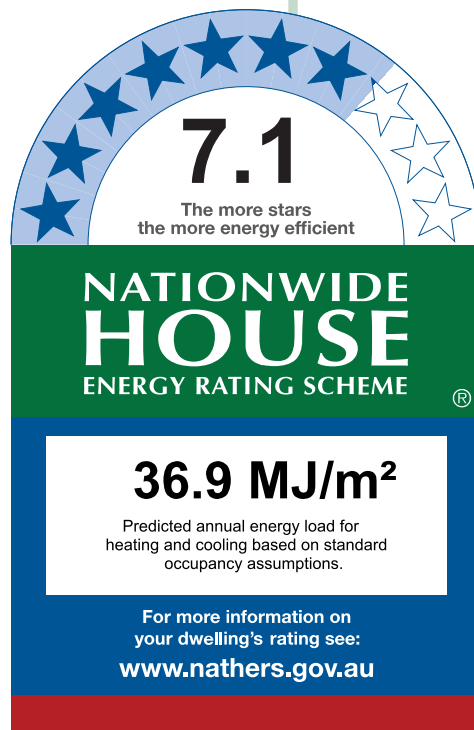
**Declaration of interest** No Conflict of Interest

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### Thermal Performance

Heating	Cooling
<b>16.4</b>	<b>20.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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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-002-03 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
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02-i-a-a	2700	2029	Sliding	45	E	None
Kitchen?living	STG-005-02 A	W04-c-a-a	2700	2643	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-002-03 A	W01	1800	2580	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3066	E	3132	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4490	N		Yes
Kitchen?living	HEBEL-100-REFL-CAV1	2740	3933	E	113	Yes
Kitchen?living	HEBEL-100-REFL-CAV1	2740	3019	N	3254	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.3	2.00
INT-PB	Internal Plasterboard Stud Wall	36.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	0.00	Tile
Kitchen?living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	25.9	N/A	0.00	Tile
Living 6	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Carpet
Living 7	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Living 7	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	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
Living 6	1	Downlight	200	Sealed
Living 7	2	Downlight	200	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) & Suspended PB Ceiling	2.68	0.50	Medium

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## Explanatory Notes

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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-B8ELCF-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 322, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	100.0	Open
Unconditioned*	3.9	<b>NatHERS climate zone</b>
<b>Total</b>	<b>103.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

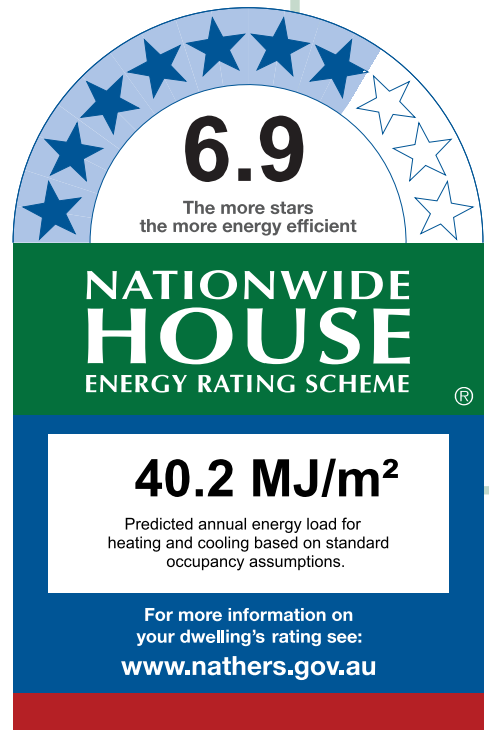
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>29.4</b>	<b>10.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-B8ELCF-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-j-a	1800	2100	Awning	27	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	STG-002-01 A	W05-m-a	1800	2100	Awning	27	S	None
Bedroom 03	STG-005-02 A	W04-p-a	2700	2400	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W01-t-a	1800	2700	Awning	27	E	None
Kitchen/Living	STG-005-02 A	W02-r-a	2700	2100	Sliding	45	S	None
Study	ALM-001-01 A	W03-q-a	2700	1200	Casement	72	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	S	2335	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3006	S	2335	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3599	S	2335	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3006	E	2694	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2646	S	8452	Yes
Study	HEBEL-100-REFL-CAV1	2740	2900	E	2694	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.0	2.00
INT-PB	Internal Plasterboard Stud Wall	92.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.0	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
Bedroom 03	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	5.0	N/A	0.00	Tile
Entry	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	39.7	N/A	0.00	Tile

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	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*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	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

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## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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	2.68	0.50	Medium

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-JI9DXC-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 323, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 46.5	Open
<b>Unconditioned*</b> 6.0	<b>NatHERS climate zone</b>
<b>Total</b> 52.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**32.5 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>21.7</b>	<b>10.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-JI9DXC-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-f-a	2700	1945	Sliding	45	S	None

\* Refer to glossary.





## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-01 A	W02-s-a	2700	976	Casement	90	W	None
Kitchen/Living	STG-002-01 A	W03-k-a	1800	2400	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3112	S	3384	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1804	W	6439	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3705	S	1657	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	678	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.3	2.00
INT-PB	Internal Plasterboard Stud Wall	22.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	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
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.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-JQQFO0-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 324, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	46.6 Open
Unconditioned*	6.0 NatHERS climate zone
Total	52.5 56 - Mascot AMO
Garage	0.0



### Accredited assessor

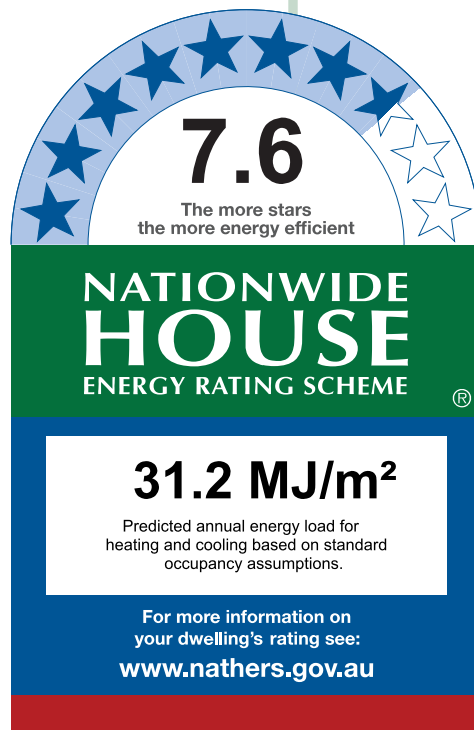
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>19.3</b>	<b>11.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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	
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ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
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STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-b-a-a	2700	1945	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	STG-002-01 A	W03-e-a-a	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-001-01 A	W02-a-a-a	2700	932	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3111	S	3362	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3704	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1782	E	6439	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.0	2.00
INT-PB	Internal Plasterboard Stud Wall	23.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	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
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)
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\* 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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## Explanatory Notes

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<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-RL90CA-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 325, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 66.3	Open
<b>Unconditioned*</b> 8.5	<b>NatHERS climate zone</b>
<b>Total</b> 74.8	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**58.7 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>44.8</b>	<b>13.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-RL90CA-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01-p-a	1800	2400	Awning	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 01	STG-005-02 A	W05-o	2700	1800	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W02-n-a	2700	2815	Sliding	45	S	None
Kitchen/Living	STG-005-02 A	W03-n-a	1800	1500	Sliding	45	W	None
Study	STG-005-02 A	W04-n-a	1800	1500	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3446	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3386	W	3963	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1615	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1588	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3974	S	3459	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3931	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	3571	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	2976	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	37.2	2.00
INT-PB	Internal Plasterboard Stud Wall	14.0	2.00
INT-PB	Internal Plasterboard Stud Wall	41.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	38.2	N/A	0.00	Carpet
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.1	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	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
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

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-OWJ11U-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 326, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 68.2	Open
<b>Unconditioned*</b> 4.0	<b>NatHERS climate zone</b>
<b>Total</b> 72.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

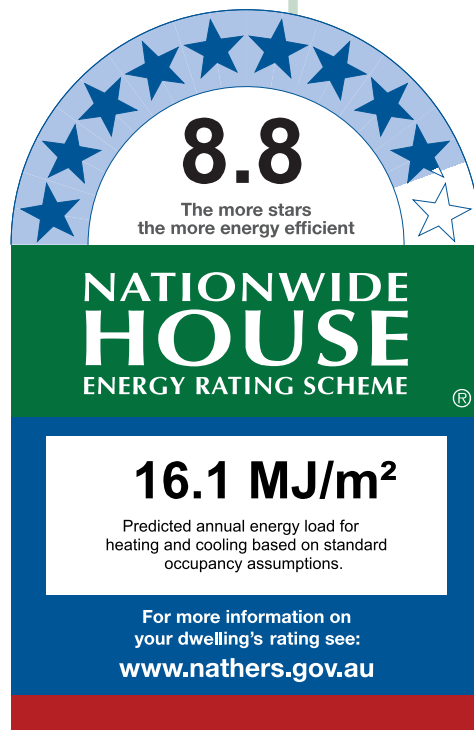
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>6.6</b>	<b>9.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

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## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02-m-a-a	1800	1015	Awning	90	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 01	STG-005-02 A	W01-n-a-a	2700	1945	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-g-a-a	2700	1760	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03-j-a-a	2700	2807	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3133	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1313	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1736	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1693	E	3139	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	3901	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3694	S	13282	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3959	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3827	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	658	E	3104	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	29.7	2.00
INT-PB	Internal Plasterboard Stud Wall	46.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
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	200	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	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			

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-NYFXZN-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 327, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.9	Open
Unconditioned*	4.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**9.1**  
The more stars  
the more energy efficient

**NATIONWIDE  
HOUSE**  
ENERGY RATING SCHEME

**12.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>2.0</b>	<b>11.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-NYFXZN-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-c-a-a	2700	1850	Sliding	45	N	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	STG-002-01 A	W01-j-a-a	1800	1022	Awning	90	N	None
Kitchen/Living	STG-005-02 A	W05-d-a-a	2700	1654	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2990	N	3005	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3612	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1910	W	3089	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.1	2.00
INT-PB	Internal Plasterboard Stud Wall	21.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	11.0	N/A	0.00	Carpet
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	100	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
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-USW074-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 328, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	72.2	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>76.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

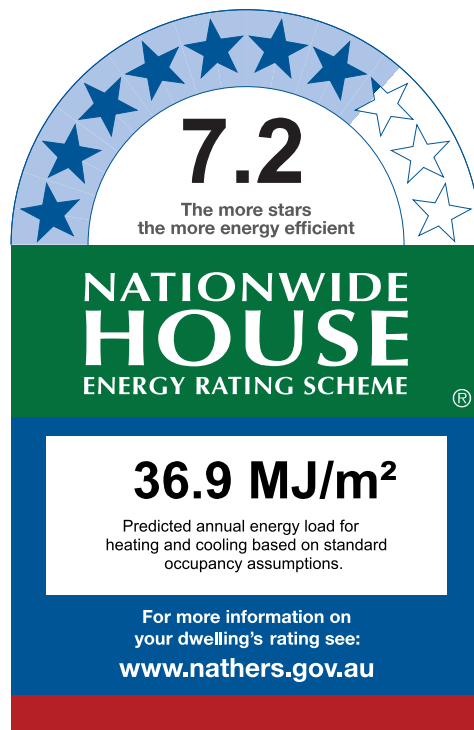
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>23.6</b>	<b>13.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-USW074-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W04-e	600	1200	Awning	90	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 02	ALM-002-01 A	W03-j	2700	2700	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-k	2700	1906	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01-k	2700	2351	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4943	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	327	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2966	W	2254	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3675	N		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2078	W	2256	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2227	N	5352	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	53.2	2.00
INT-PB	Internal Plasterboard Stud Wall	41.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	14.6	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	4.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.4	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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\* 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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-XE3I2G-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 329, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	72.0	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

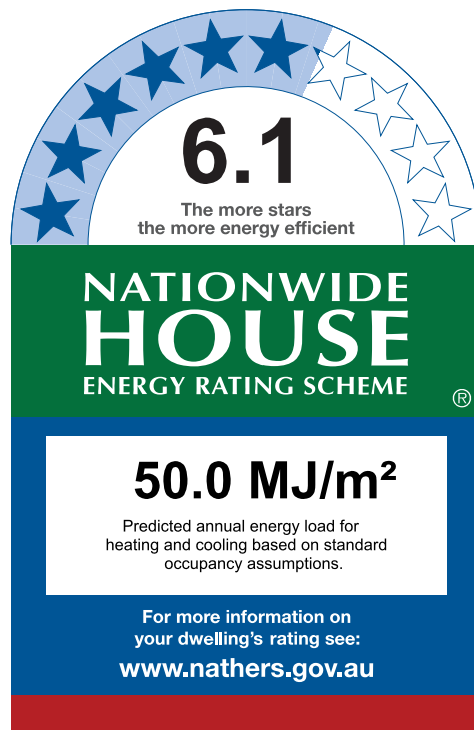
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>35.4</b>	<b>14.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-XE3I2G-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-I	1800	2400	Awning	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W04-f	2700	2390	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-k	2700	2475	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W02-l	1800	950	Awning	90	E	None
Kitchen/Living	ALM-001-01 A	W05-c	1800	950	Awning	90	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	12	S		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4664	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2965	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	E	3329	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1605	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	S	3747	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3983	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.1	2.00
INT-PB	Internal Plasterboard Stud Wall	46.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.9	N/A	0.00	Tile



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
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

## 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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\* Refer to glossary.



# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-S74JND-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 330, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	61.0	Suburban
Unconditioned*	2.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>63.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

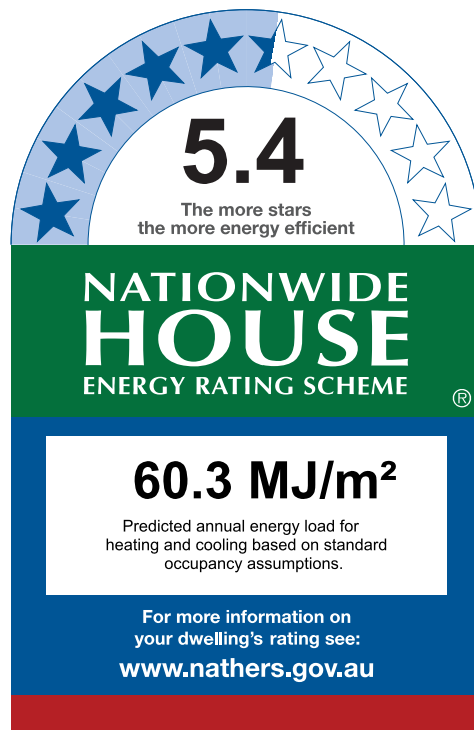
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>44.1</b>	<b>16.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-S74JND-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-n	2700	2095	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-001-01 A	W01-o	1800	2400	Awning	45	E	None
Kitchen/Living	ALM-002-01 A	W02-o	2700	2021	Sliding	45	S	None
Study	ALM-002-01 A	W04-i	2700	900	Awning	60	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	1587	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3048	E	2536	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3602	S	1216	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3585	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2552	S	4380	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	N	3986	Yes
Study	HEBEL-100-REFL-CAV1	2740	2868	S		Yes
Study	HEBEL-100-REFL-CAV1	2740	1164	E	6266	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	39.4	2.00
INT-PB	Internal Plasterboard Stud Wall	46.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.00	Tile
Storage	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.0	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.9	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	2	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

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-SIYMSZ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 331, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 45.2	Suburban
<b>Unconditioned*</b> 4.1	<b>NatHERS climate zone</b>
<b>Total</b> 49.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

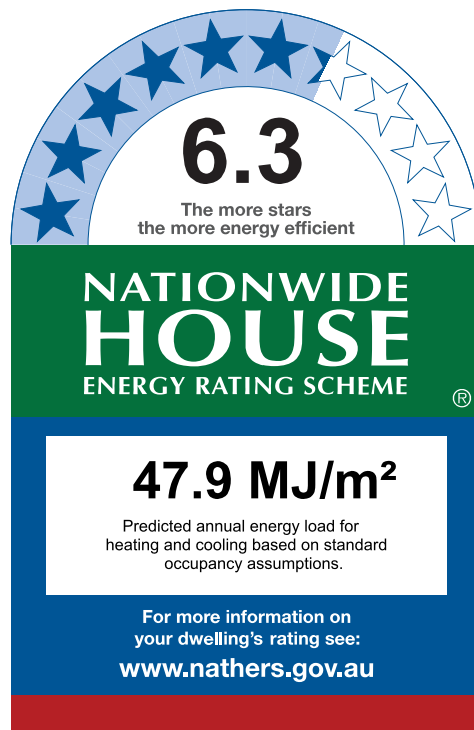
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>30.6</b>	<b>17.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-o	2700	2400	Sliding	45	N	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W02-p	1800	2400	Awning	45	E	None
Kitchen/Living	ALM-002-01 A	W01-p	2700	1878	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3270	N	2677	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3175	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6901	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2329	E	3942	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	571	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	42.9	2.00
INT-PB	Internal Plasterboard Stud Wall	21.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.3	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	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.



## Explanatory Notes

### About this report

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<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-LUNYXU-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 332, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	71.0	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.3</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

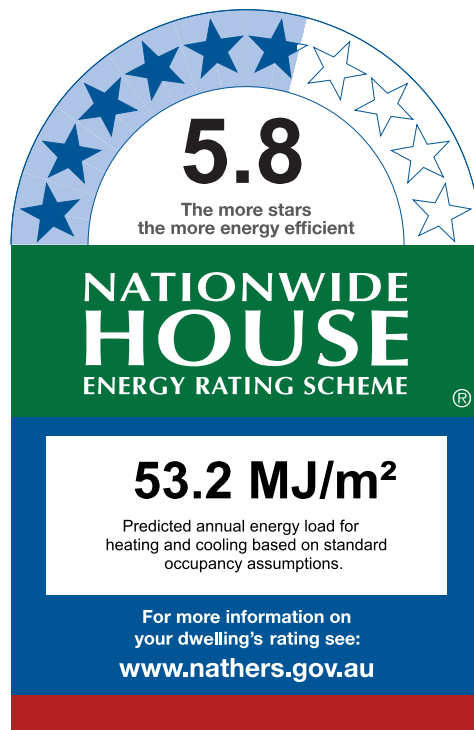
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>32.3</b>	<b>20.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-LUNYXU-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W04-a	2700	2186	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	W03-a	2700	1966	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-a	2700	3586	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W05-a	1800	2400	Awning	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3014	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	408	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2977	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	714	E	8254	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8139	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4003	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.6	2.00
INT-PB	Internal Plasterboard Stud Wall	47.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.8	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	3.7	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.4	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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## 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	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-WYY63B-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 333, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type	
Conditioned*	68.9	Suburban
Unconditioned*	3.7	<b>NatHERS climate zone</b>
<b>Total</b>	72.5	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

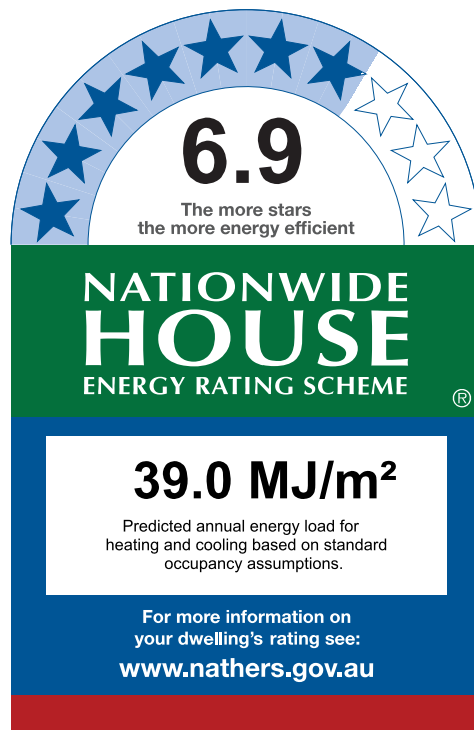
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>21.1</b>	<b>17.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-WYY63B-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W03-i	1800	2400	Awning	27	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-001-01 A	W02-i	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01-i	2700	2731	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2996	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	388	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2962	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1249	W	4031	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3987	S	3207	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	73.0	2.00
INT-PB	Internal Plasterboard Stud Wall	42.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	14.3	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	3.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.4	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



## 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
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-Z41ZK2-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 334, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	70.4	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>74.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

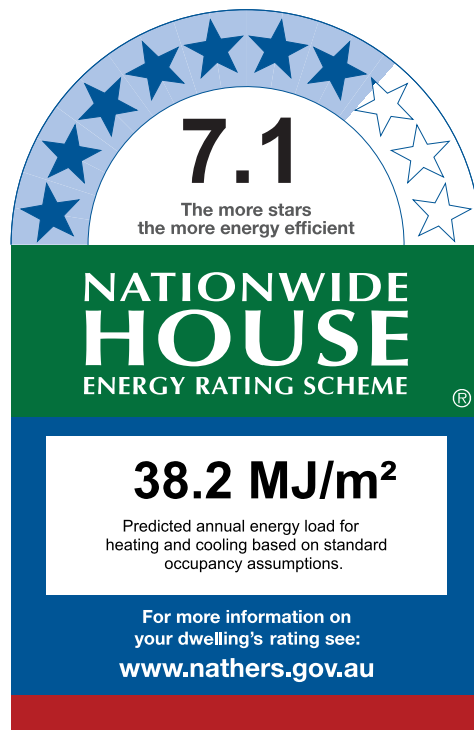
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>21.6</b>	<b>16.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-Z41ZK2-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-h	1800	2400	Awning	27	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-002-01 A	W02-h	2700	1066	Fixed	0	S	None
Kitchen/Living	ALM-002-01 A	W03-h	2700	2773	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

\* Refer to glossary.

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3014	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1588	E	5781	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1753	S	3235	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3861	S	3207	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	71.0	2.00
INT-PB	Internal Plasterboard Stud Wall	60.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.3	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Tile
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	31.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	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

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	3	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
Laundry	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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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-H9WQQS-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 335, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	69.7	Suburban
Unconditioned*	7.6	<b>NatHERS climate zone</b>
<b>Total</b>	<b>77.3</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

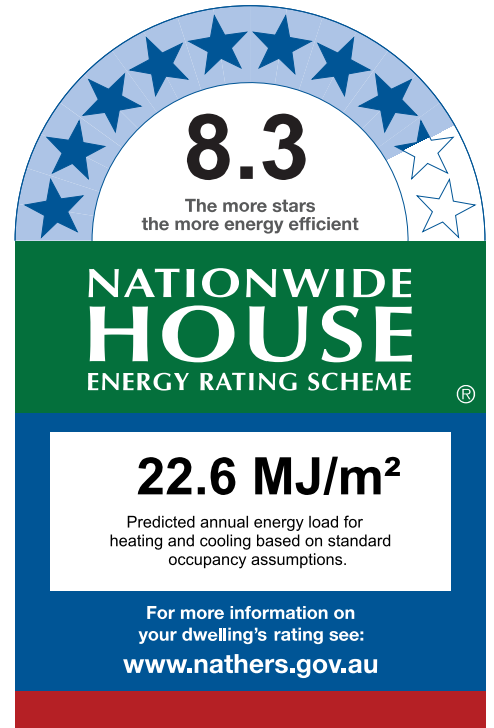
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 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
<b>8.9</b>	<b>13.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, 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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Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-j	2700	1139	Awning	60	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-001-01 A	W01-j	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W08-a	2700	3110	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1567	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1749	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3055	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	N	2778	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1292	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	96.4	2.00
INT-PB	Internal Plasterboard Stud Wall	47.1	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.6	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.9	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
Hallway	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	38.8	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	2	Downlight	100	Sealed
Bathroom	2	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
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### 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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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-IEP58W-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 336, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	43.7 Suburban
Unconditioned*	5.7 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](http://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

**27.3 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>10.8</b>	<b>16.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-IEP58W-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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-d	2700	1147	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-01 A	W03-d	1800	2417	Awning	45	N	None
Kitchen/Living	ALM-002-01 A	W02-c	2700	2330	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3069	N	2991	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2709	E	2904	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	4186	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.2	2.00
INT-PB	Internal Plasterboard Stud Wall	31.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	22.1	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	100	Sealed

\* Refer to glossary.





## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	3	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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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.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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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-G6EG8R-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 337, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	48.3 Suburban
Unconditioned*	4.3 NatHERS climate zone
Total	52.6 56 - Mascot AMO
Garage	0.0



### Accredited assessor

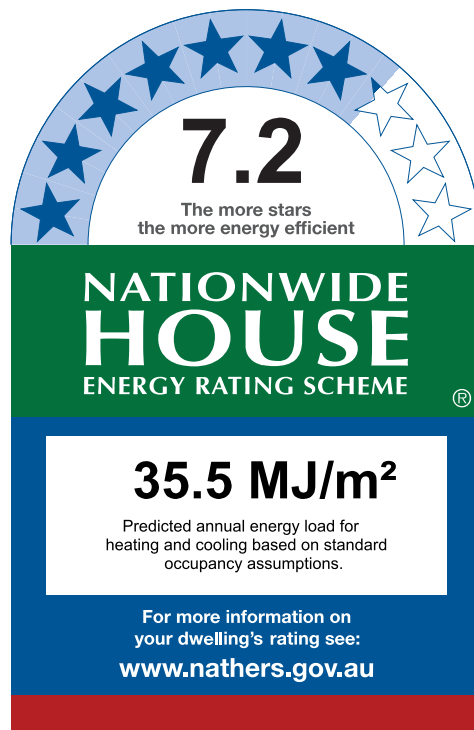
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>16.0</b>	<b>19.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-I	2700	1217	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-001-01 A	W01-m	1800	2263	Awning	45	N	None
Kitchen/Living	ALM-002-01 A	W02-m	2700	3271	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04-g	600	1200	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2308	N	4377	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3598	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5377	E	2188	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4975	W	3228	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.9	2.00
INT-PB	Internal Plasterboard Stud Wall	22.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.5	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

## Explanatory Notes

### About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-NOLC23-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 338, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	47.8 Suburban
Unconditioned*	8.5 NatHERS climate zone
Total	56.2 56 - Mascot AMO
Garage	0.0



### Accredited assessor

**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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**8.2**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**23.2 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>9.8</b>	<b>13.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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-e	2700	1155	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01-f	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1778	W	3809	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	3749	N	2343	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2033	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	76.3	2.00
INT-PB	Internal Plasterboard Stud Wall	20.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
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\* 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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<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-DFE45Q-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 339, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	97.2	Suburban
Unconditioned*	3.9	<b>NatHERS climate zone</b>
Total	101.1	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

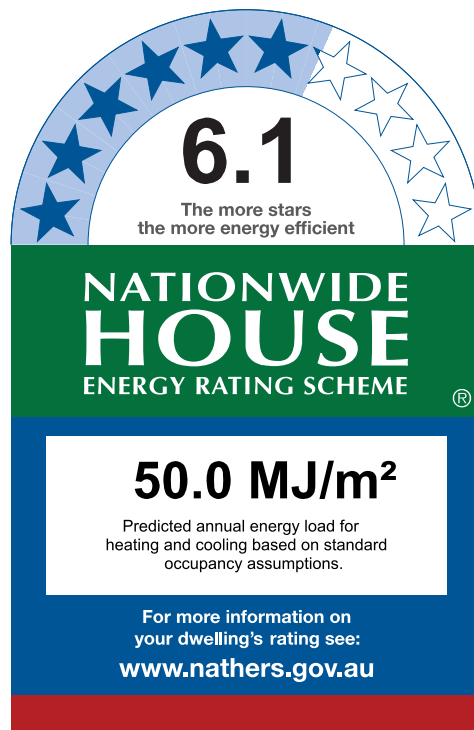
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>27.9</b>	<b>22.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-DFE45Q-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-d	2700	2151	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-001-01 A	W03-m	1800	2400	Awning	27	S	None
Bedroom 03	ALM-001-01 A	W04-h	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01-n	2700	4507	Sliding	45	W	None
Kitchen/Living	ALM-001-01 A	W02-n	1800	2400	Awning	27	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2985	S	2668	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2990	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3027	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2634	E	5936	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5991	W	2692	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6342	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.3	2.00
INT-PB	Internal Plasterboard Stud Wall	64.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.6	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.8	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	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-EF3HUC-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 340, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 44.3	Suburban
<b>Unconditioned*</b> 4.6	<b>NatHERS climate zone</b>
<b>Total</b> 48.9	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

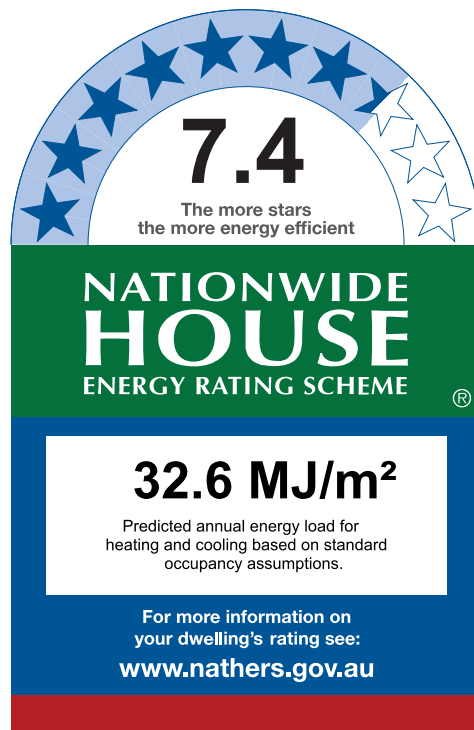
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>19.5</b>	<b>13.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04-c	2700	1165	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-f	2700	3340	Sliding	66	N	None
Kitchen/Living	ALM-001-04 A	W02-f	1800	2381	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2319	W	3599	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4752	N	2257	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1863	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3977	WNW	183	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.1	2.00
INT-PB	Internal Plasterboard Stud Wall	24.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.6	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

\* Refer to glossary.





## Ceiling fans

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-7F456K-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 341, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.9	Suburban
Unconditioned*	4.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

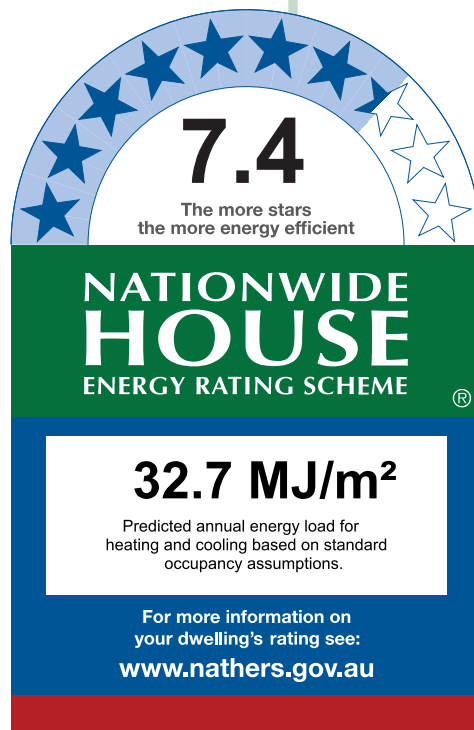
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>17.6</b>	<b>15.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-7F456K-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-b	2700	2100	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-001-04 A	W01-b	1800	2381	Awning	27	NW	None
Kitchen/Living	ALM-002-01 A	W02-a	2700	2562	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	614	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2417	W	3648	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4042	NW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4539	N	2504	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3630	S	2842	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	49.7	2.00
INT-PB	Internal Plasterboard Stud Wall	23.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.6	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licenced assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-N2VLEG-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 342, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	81.9	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>87.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

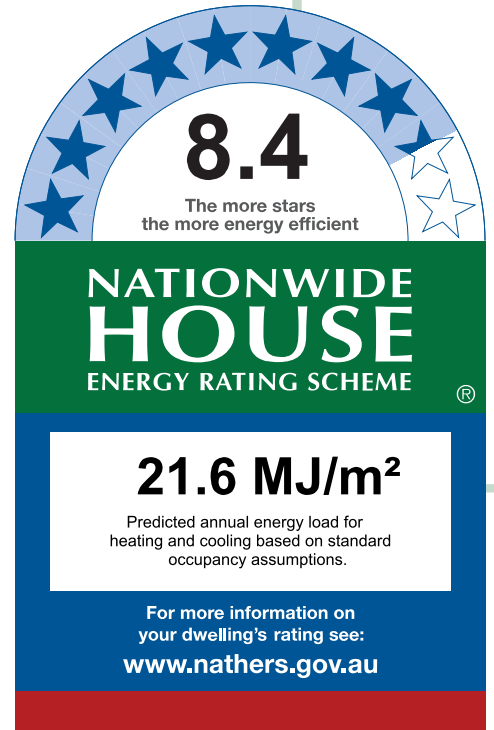
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>9.3</b>	<b>12.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-N2VLEG-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-e	2700	1500	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-001-01 A	W02-d	1800	1044	Awning	90	E	None
Kitchen/Living	ALM-002-01 A	W01-e	2700	2895	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2505	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	6182	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3901	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3421	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1781	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3839	W	4262	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6532	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	44.2	2.00
INT-PB	Internal Plasterboard Stud Wall	50.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	49.8	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
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\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a 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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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-3Q98A0-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 343, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	79.2 Suburban
Unconditioned*	6.3 NatHERS climate zone
Total	85.5 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](http://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/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>14.4</b>	<b>10.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-3Q98A0-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-c	2700	1081	Awning	60	S	None

\* Refer to glossary.





## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-001-01 A	W01-c	1800	1121	Awning	90	N	None
Kitchen/Living	ALM-002-01 A	W02-b	2700	3073	Sliding	45	N	None
Study	ALM-001-01 A	W04-b	1800	1130	Awning	90	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1623	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3016	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Hallway	HEBEL-100-REFL-CAV1	2740	2117	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3982	N	2771	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1362	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	1938	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	79.1	2.00
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	0.3	0.00
INT-PB	Internal Plasterboard Stud Wall	62.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.5	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	9.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.4	N/A	0.00	Tile



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
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

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-38DPUV-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 344, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	92.1	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>97.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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**6.3**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**47.1 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>31.3</b>	<b>15.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and 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	W07-a	600	900	Awning	90	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W06-a	1800	2400	Awning	27	S	None
Bedroom 01	ALM-002-01 A	W05-b	2700	1799	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-g	2700	1800	Sliding	45	E	None
Bedroom 02	ALM-001-01 A	W01-g	1800	2400	Awning	27	S	None
Bedroom 03	ALM-002-01 A	W03-g	2700	1500	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04-d	2700	2724	Sliding	66	S	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4848	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3303	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2163	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2582	W	3712	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	E	10103	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3112	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2413	S	3091	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4191	S	2163	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	928	W	2597	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.6	2.00
INT-PB	Internal Plasterboard Stud Wall	64.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.0	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.3	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
----------	----------	---------------

\* 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.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-PA2TCW-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 401, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	71.3	Open
Unconditioned*	5.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>76.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

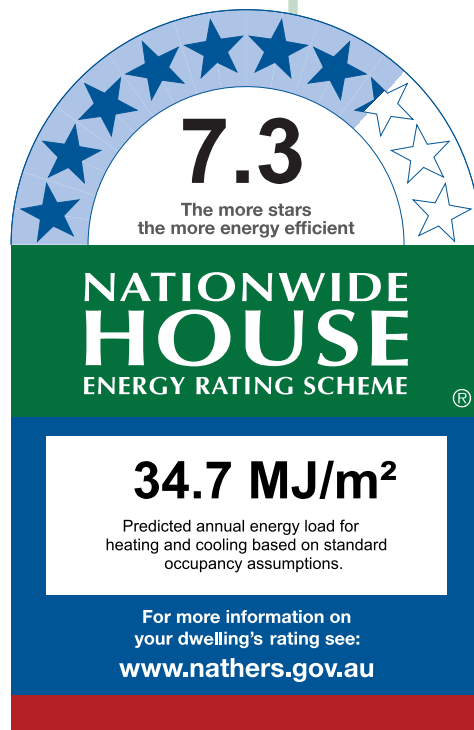
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>26.7</b>	<b>8.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-PA2TCW-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-g-a-a	2700	2100	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 01	STG-002-01 A	W05-i-a-a	1800	900	Awning	90	W	None
Bedroom 02	STG-002-01 A	W04-l-a-a	1800	900	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W07-a-a-a	2700	3155	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2731	N	4663	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3599	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3811	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3239	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1608	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	127	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	296	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4509	W	2779	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	78.1	2.00
INT-PB	Internal Plasterboard Stud Wall	38.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium



## Explanatory Notes

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-CNTUEL-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 402, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	53.7	Open
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>57.9</b>	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**50.5 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>28.1</b>	<b>22.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-CNTUEL-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76
STG-077-05 A	Aluminium Fixed Window SG 5Clr	5.89	0.75	0.71	0.79

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
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## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	STG-005-02 A	W03	2700	2700	Sliding	45	N	None
Bedroom 01	STG-077-05 A	W02	1800	900	Fixed	0	W	None
Kitchen/Living	STG-005-02 A	W04	2700	1757	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W05	2700	975	Awning	60	N	None
Study	STG-077-05 A	W01	1800	900	Fixed	0	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	1799	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3683	N	3276	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3345	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3640	N	3276	Yes
Study	HEBEL-100-REFL-CAV1	2740	2688	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	2752	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	34.6	2.00
INT-PB	Internal Plasterboard Stud Wall	38.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	29.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.2	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.9	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen/Living	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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-WF1N3Y-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 403, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	95.2	Open
Unconditioned*	4.6	<b>NatHERS climate zone</b>
<b>Total</b>	<b>99.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

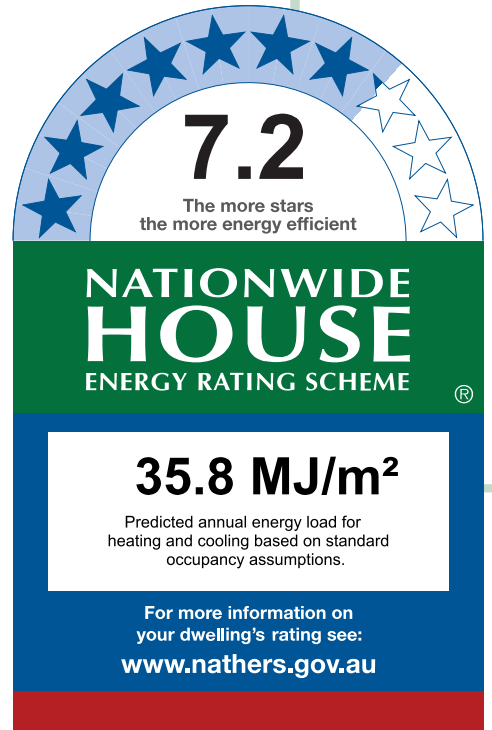
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 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
<b>25.7</b>	<b>10.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and 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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## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

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### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-077-05 A	Aluminium Fixed Window SG 5Clr	5.89	0.75	0.71	0.79

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-077-05 A	W04	1800	2400	Sliding	45	N	None
Bedroom 02	STG-077-05 A	W02	1800	2100	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	STG-077-05 A	W03	1800	2100	Sliding	45	N	None
Kitchen/Living	STG-077-05 A	W01	1800	3600	Sliding	66	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3841	N	3276	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3027	N	3276	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3048	N	3276	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4199	N	3276	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	85.2	2.00
INT-PB	Internal Plasterboard Stud Wall	89.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.1	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.6	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	0.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.2	N/A	0.00	Tile
Linen	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.6	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.1	N/A	0.00	Tile
WIR	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.0	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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\* Refer to glossary.

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Linen	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
WIR	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
WIR	1	Downlight	200	Sealed

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.



## Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Conditioned</b>	a 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-VAO5NO-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 404, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	110.6	Open
Unconditioned*	5.0	<b>NatHERS climate zone</b>
<b>Total</b>	115.6	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**49.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>39.8</b>	<b>10.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-VAO5NO-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W07	2700	2400	Sliding	45	E	None
Bedroom 02	STG-005-02 A	W01	2700	1200	Sliding	45	N	None

\* Refer to glossary.





## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-001-01 A	W02	1800	907	Casement	90	N	None
Bedroom 03	STG-005-02 A	W03	2700	2700	Sliding	45	N	None
Kitchen/Living	STG-005-02 A	W04	2700	3195	Sliding	45	N	None
Kitchen/Living	STG-005-02 A	W05	2700	3000	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W06	2700	2400	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2984	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3302	E	3009	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	N	3276	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3662	N	3276	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	N	3276	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8044	E	3032	Yes
WIR	HEBEL-100-REFL-CAV1	2740	2159	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	51.7	2.00
INT-PB	Internal Plasterboard Stud Wall	98.3	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.7	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.1	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.9	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	14.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	45.0	N/A	0.00	Tile

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile
WIR	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
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Laundry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
WIR	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
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Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry	2	Downlight	200	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
Laundry	1	Downlight	200	Sealed
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## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

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<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-LHQ774-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 405, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	76.0	Open
Unconditioned*	4.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>80.7</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

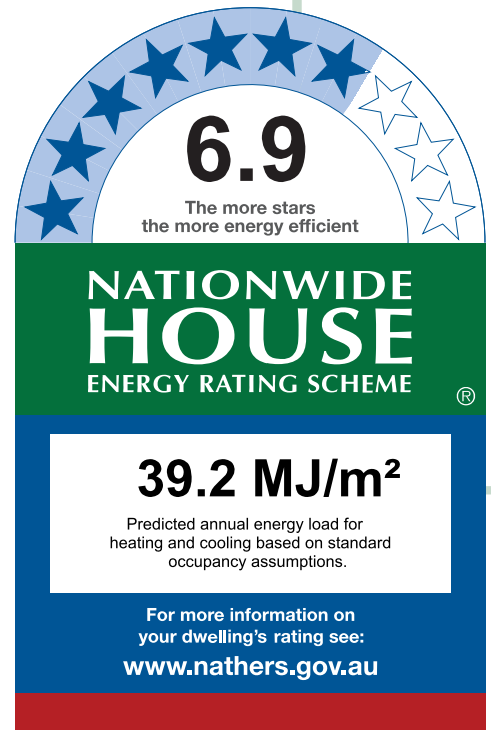
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>29.1</b>	<b>10.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-LHQ774-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01-o-a-a	1800	1200	Awning	90	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 03	STG-005-02 A	W03-l-a-a	2700	2560	Sliding	45	N	None
Bedroom 03	STG-002-01 A	W04-j-a-a	1800	2700	Awning	29	E	None
Kitchen/Living	STG-005-02 A	W02-e-a-a	2700	2100	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	311	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1780	E	3552	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3429	N	4345	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3176	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1164	S	5193	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2524	E	3553	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.5	2.00
INT-PB	Internal Plasterboard Stud Wall	60.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.7	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.7	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	14.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.8	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	36.5	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 03	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 absorbance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-NS9VAP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 406, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	48.2 Open
Unconditioned*	6.0 NatHERS climate zone
Total	54.2 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](http://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/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
27.7	14.4
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-h-a-a-a	2700	2050	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03-f-a-a-a	2700	2322	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	STG-005-02 A	W02-g-a-a-a	1800	2392	Awning	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3074	W	3014	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	318	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2880	S	2970	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3622	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2983	N	7652	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	147	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	141	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	58.3	2.00
INT-PB	Internal Plasterboard Stud Wall	21.3	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
----------	----------	------	---------------	------------------

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## 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) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.





## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Conditioned</b>	a 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-LRL3NE-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 407, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	80.4	Open
Unconditioned*	7.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>88.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

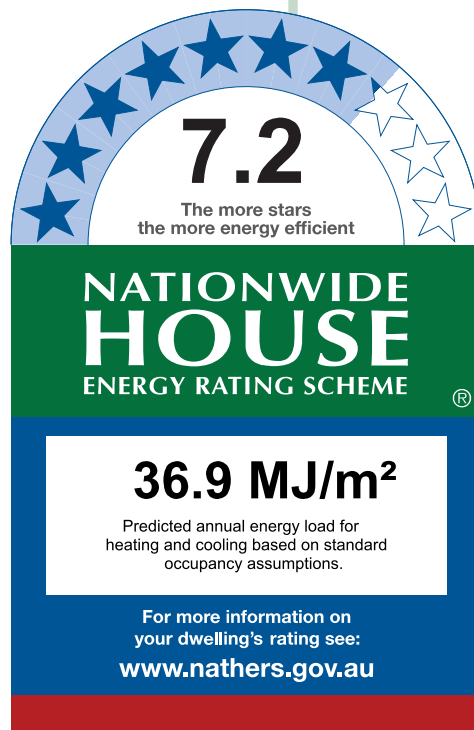
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>23.2</b>	<b>13.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-LRL3NE-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-h-a-a	2700	2307	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-m-a-a	2700	889	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	STG-005-02 A	W05-j-a-a	2700	2400	Sliding	45	W	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	2971	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1440	S	7165	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	W	2971	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	91.6	2.00
INT-PB	Internal Plasterboard Stud Wall	67.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.9	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.6	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No



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Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## 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
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	2	Downlight	200	Sealed
bathroom	1	Downlight	200	Sealed
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## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-4BZKZ0-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 408, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	107.2	Open
Unconditioned*	4.0	<b>NatHERS climate zone</b>
<b>Total</b>	<b>111.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

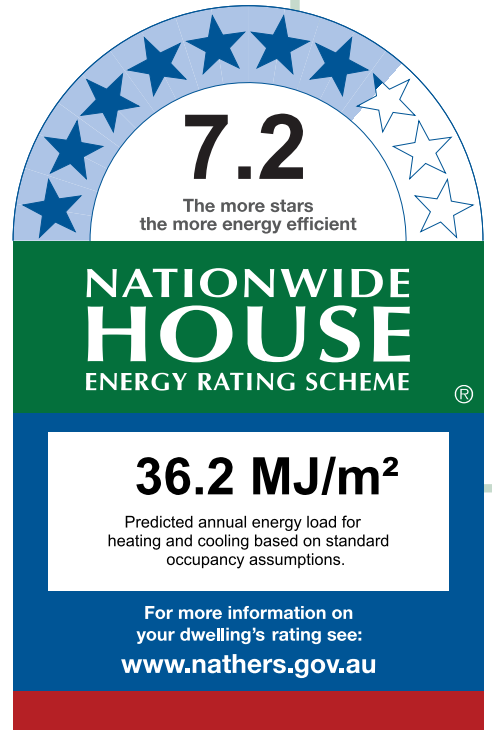
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>27.3</b>	<b>8.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02-p-a	1800	2400	Awning	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 01	STG-002-01 A	W03-r-a	1800	1200	Awning	90	S	None
Bedroom 02	STG-002-01 A	W04-q-a	1800	1200	Awning	90	E	None
Bedroom 02	STG-005-02 A	W01-a-a-a-a	2700	1169	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W06-i-a	1800	2400	Awning	27	E	None
Kitchen/Living	STG-005-02 A	W05-n-a	2700	3410	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	E	3686	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3196	S	1890	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1693	E	6966	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2205	S	5305	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3030	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	241	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	360	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3641	E	69	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	312	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6499	N	5220	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	80.5	2.00
INT-PB	Internal Plasterboard Stud Wall	88.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	18.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	21.6	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.4	N/A	0.00	Tile

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	54.4	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	1.9	N/A	0.00	Tile
Linen	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Linen	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	3	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Linen	1	Downlight	200	Sealed

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-MKY5WK-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 409, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	82.7	Open
Unconditioned*	3.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>85.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

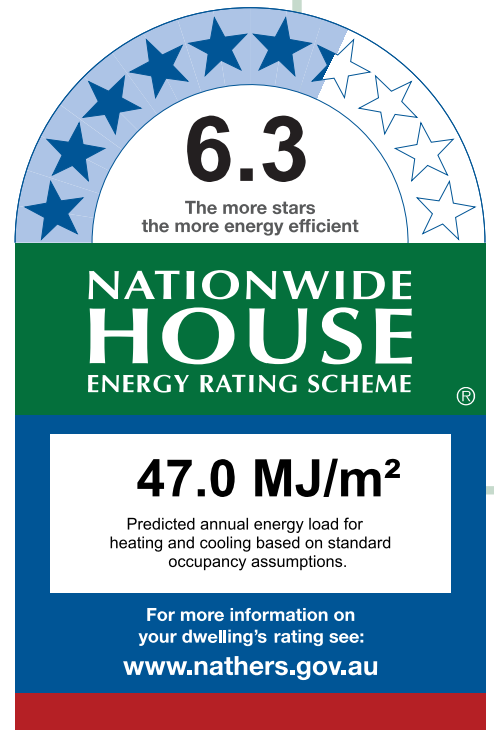
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

## National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



## Thermal Performance

Heating	Cooling
<b>36.9</b>	<b>10.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-MKY5WK-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-002-01 A	W01-u-a	2700	1200	Awning	60	E	None

\* Refer to glossary.





## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 03	STG-005-02 A	W05-k-a-a	2700	2400	Sliding	45	E	None
Bedroom 03	STG-002-01 A	W02-f-a-a	600	1200	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W04-a-a-a-a	2700	2479	Sliding	45	E	None
Kitchen/Living	STG-002-01 A	W06-a-a-a-a	600	900	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W03-a-a-a-a	2700	3412	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1900	E	6033	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2985	E	2910	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3008	S	2017	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4008	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5339	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5545	N	4677	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	68.0	2.00
INT-PB	Internal Plasterboard Stud Wall	71.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	17.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.4	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	33.0	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	N/A	0.00	Tile
Linen	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Tile
Study/Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Tile

\* Refer to glossary.

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Linen	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study/Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	1	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Laundry	1	Exhaust Fan	350	Sealed
Linen	1	Downlight	200	Sealed
Study/Entry	2	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

\* Refer to glossary.



## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Conditioned</b>	a 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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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
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<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-1RCEL0-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 410, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	74.2	Open
Unconditioned*	3.9	<b>NatHERS climate zone</b>
<b>Total</b>	<b>78.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

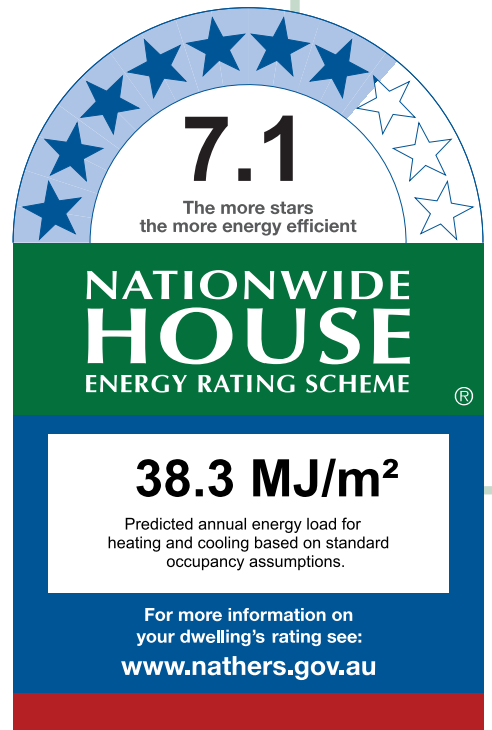
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

## National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



## Thermal Performance

Heating	Cooling
<b>22.0</b>	<b>16.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

## Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-1RCEL0-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-005-02 A	W02-b-a-a-a	1800	2190	Awning	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*
Bedroom 02	STG-002-01 A	W03-m-a-a	1800	1101	Awning	90	W	None
Kitchen/Living	STG-005-02 A	W01-i-a-a-a	2700	2781	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes



## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3009	W	2285	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3757	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1639	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4006	E	2794	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	97.8	2.00
INT-PB	Internal Plasterboard Stud Wall	52.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Carpet
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	31.8	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

\* Refer to glossary.

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	2	Downlight	200	Sealed
Kitchen/Living	5	Downlight	100	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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-QMETL4-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 411, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	49.5 Open
Unconditioned*	5.5 NatHERS climate zone
Total	55.0 56 - Mascot AMO
Garage	0.0



### Accredited assessor

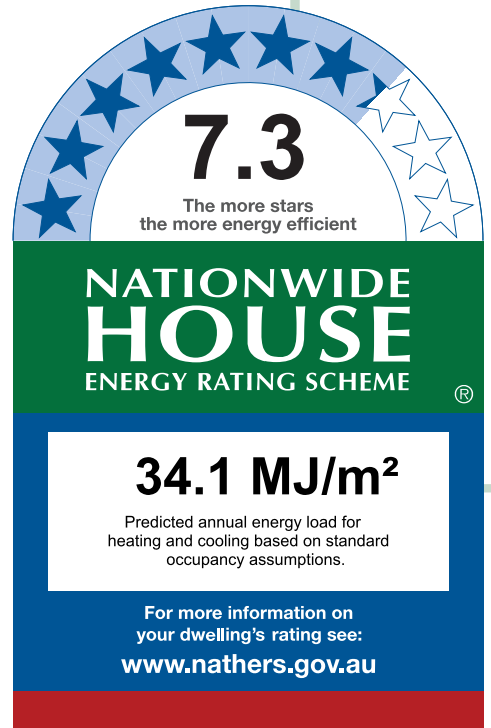
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>23.6</b>	<b>10.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W03-b-a-a-a	2700	2026	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	STG-005-02 A	W05-b-a-a-a	1800	2351	Awning	45	W	None
Kitchen/Living	STG-005-02 A	W01-q-a-a	2700	2313	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W02-o-a-a	600	1060	Awning	90	S	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2996	W	3040	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3602	W	30	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3007	N	3025	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2187	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.3	2.00
INT-PB	Internal Plasterboard Stud Wall	23.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	36.4	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.



## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-S66X92-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 412, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	69.0	Open
Unconditioned*	6.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>26.3</b>	<b>16.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-S66X92-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05-c-a-a-a	2700	1085	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-b-a-a-a	2700	2212	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	STG-005-02 A	W03-c-a-a-a	2700	2410	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W01-g-a-a	2700	1800	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1369	W	5507	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	2227	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3112	S	1304	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4034	W	50	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1954	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2177	S	5002	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	62.4	2.00
INT-PB	Internal Plasterboard Stud Wall	49.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.1	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	37.7	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

\* Refer to glossary.



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorbptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

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## Explanatory Notes

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-BNNC4N-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 413, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 76.9	Open
<b>Unconditioned*</b> 3.9	<b>NatHERS climate zone</b>
<b>Total</b> 80.7	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

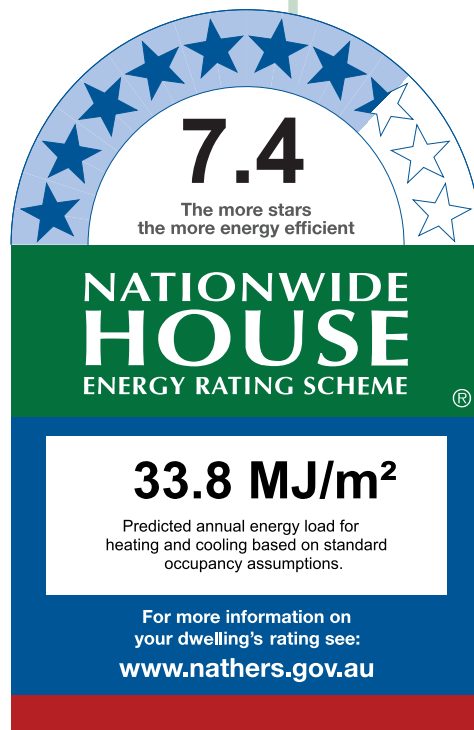
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>19.4</b>	<b>14.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-BNNC4N-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-c-a-a-a	2700	1157	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*
Bedroom 02	STG-002-01 A	W03-p-a-a	1800	1101	Awning	90	W	None
Kitchen/Living	STG-005-02 A	W02-h-a-a-a	2700	2700	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4081	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3051	W	2037	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1652	W		Yes
Entry	HEBEL-100-REFL-CAV1	2740	323	S		Yes
Entry	HEBEL-100-REFL-CAV1	2740	317	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3951	E	2779	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	100.4	2.00
INT-PB	Internal Plasterboard Stud Wall	47.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.5	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.8	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

\* Refer to glossary.

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Exhaust Fan	350	Sealed
Entry	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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-COMBG3-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 414, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	106.6	Open
Unconditioned*	4.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>110.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

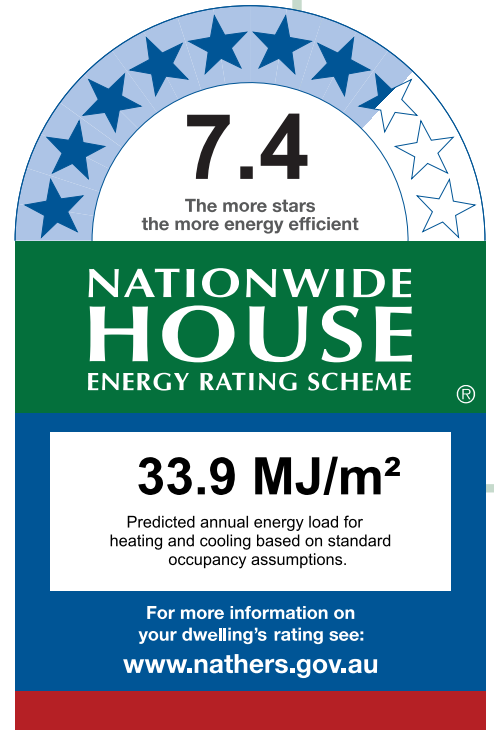
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>23.1</b>	<b>10.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

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## Certificate Check

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-m-a-a-a	2700	2300	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-d-a-a-a	600	1200	Awning	90	S	None
Bedroom 02	STG-005-02 A	W02-l-a-a-a	2700	1191	Sliding	45	E	None
Bedroom 03	STG-005-02 A	W05-e-a-a-a	2700	1142	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W04-f-a-a-a	2700	2401	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W03-i-a-a-a	2700	3163	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2973	E	2949	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3257	S	2583	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2445	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1686	E	6368	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3018	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3584	S	2759	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4007	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5934	N	5187	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	260	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1271	S	2792	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	548	E	6369	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	71.6	2.00
INT-PB	Internal Plasterboard Stud Wall	82.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	19.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.6	N/A	0.00	Carpet

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	52.7	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	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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<b>Entrance door</b>	these signify ventilation benefits 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-BHZK6O-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 415, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 80.9	Open
<b>Unconditioned*</b> 7.2	<b>NatHERS climate zone</b>
<b>Total</b> 88.1	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

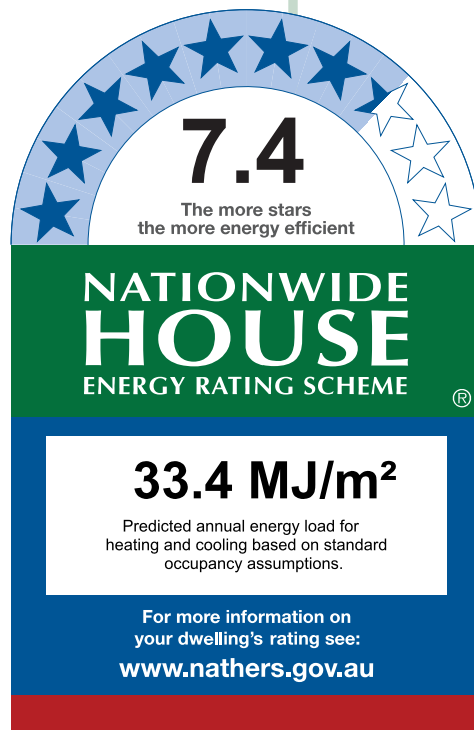
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>21.2</b>	<b>12.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-BHZK6O-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



## 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-k-a-a-a	2700	2053	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	STG-002-01 A	W04-d-a-a-a	1800	1060	Awning	90	W	None
Kitchen/living	STG-005-02 A	W02-j-a-a-a	2700	2390	Sliding	45	E	None
Kitchen/living	STG-002-01 A	W03-g-a-a-a	1800	3348	Awning	30	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	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*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2630	E	5668	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1573	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4078	E		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	2810	S	6212	No
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5151	N	2536	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	82.9	2.00
INT-PB	Internal Plasterboard Stud Wall	68.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.0	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.1	N/A	0.00	Tile
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.5	N/A	0.00	Tile
Kitchen/living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	33.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.3	N/A	0.00	Carpet



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/living	4	Downlight	100	Sealed
Kitchen/living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	200	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour

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## Roof type

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-YH9L38-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 416, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	45.7 Open
Unconditioned*	3.8 NatHERS climate zone
Total	49.6 56 - Mascot AMO
Garage	0.0



### Accredited assessor

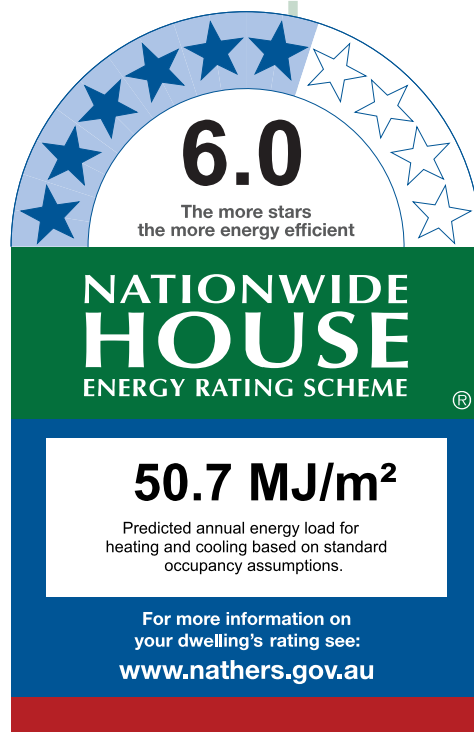
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

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### Thermal Performance

Heating	Cooling
<b>32.5</b>	<b>18.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-002-03 A	W03-h-a-a-a	2700	2136	Sliding	45	W	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W02-k-a-a-a	600	1200	Awning	90	S	None
Kitchen/Living	ALM-002-03 A	W01-l-a-a-a	2700	2808	Sliding	45	W	None
Study	STG-005-02 A	W04-e-a-a-a	2700	778	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3008	W	2337	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3727	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4426	W	2342	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3136	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	1891	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	41.7	2.00
INT-PB	Internal Plasterboard Stud Wall	28.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.8	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	28.5	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	Downlight	100	Sealed
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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium



## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

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AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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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<b>Conditioned</b>	a 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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<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-1D3BHE-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 417, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	96.7	Open
Unconditioned*	4.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>101.5</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

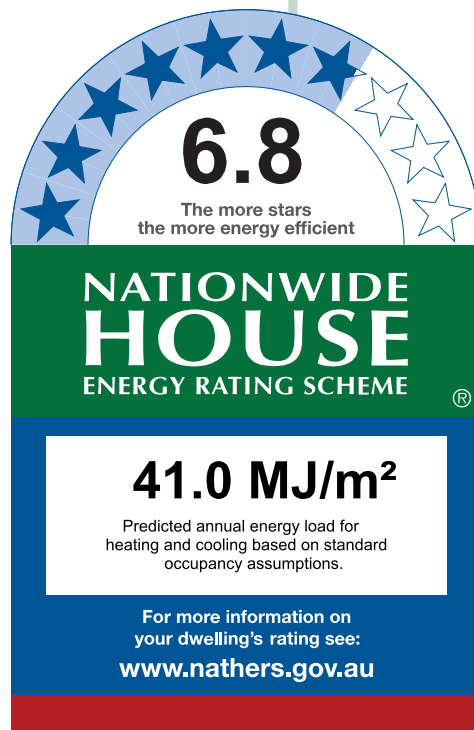
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>28.6</b>	<b>12.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-1D3BHE-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02-d-a-a-a	2700	995	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W03-d-a-a-a	2700	1109	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*
Bedroom 03	ALM-001-01 A	W01-e-a-a-a	2700	1193	Casement	90	E	None
Kitchen/Living	STG-005-02 A	W01-d-a-a-a	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)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2936	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1627	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1644	E	4811	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2835	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1994	S	1891	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	87.0	2.00
INT-PB	Internal Plasterboard Stud Wall	84.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.2	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.3	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	14.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

\* Refer to glossary.

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Study	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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.

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-A60ENL-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 418, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	49.3 Open
Unconditioned*	4.6 NatHERS climate zone
Total	53.9 56 - Mascot AMO
Garage	0.0



### Accredited assessor

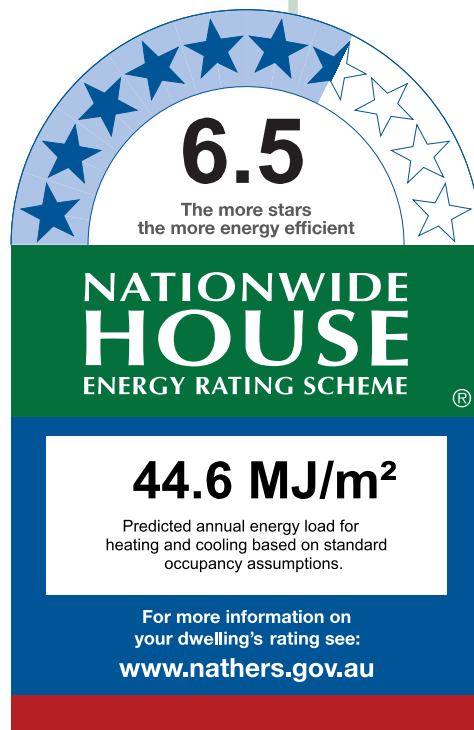
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>26.4</b>	<b>18.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-A60ENL-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02-i-a-a-a	2700	2029	Sliding	45	E	None
Kitchen?living	STG-005-02 A	W04-c-a-a-a	2700	2110	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2982	E	3067	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	4490	N		Yes
Kitchen?living	HEBEL-100-REFL-CAV1	2740	3988	E	3048	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	39.0	2.00
INT-PB	Internal Plasterboard Stud Wall	23.4	0.00
INT-PB	Internal Plasterboard Stud Wall	18.4	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Tile
Bathroom	CSOG-200: Concrete Slab on Ground (200mm)	0.2	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.4	N/A	0.00	Tile
Kitchen?living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.4	N/A	0.00	Tile
Kitchen?living	CSOG-200: Concrete Slab on Ground (200mm)	1.5	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen?living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	200	Sealed
Kitchen?living	5	Downlight	200	Sealed
Kitchen?living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	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-W9UWYY-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** 419, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	88.7	Open
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>92.5</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

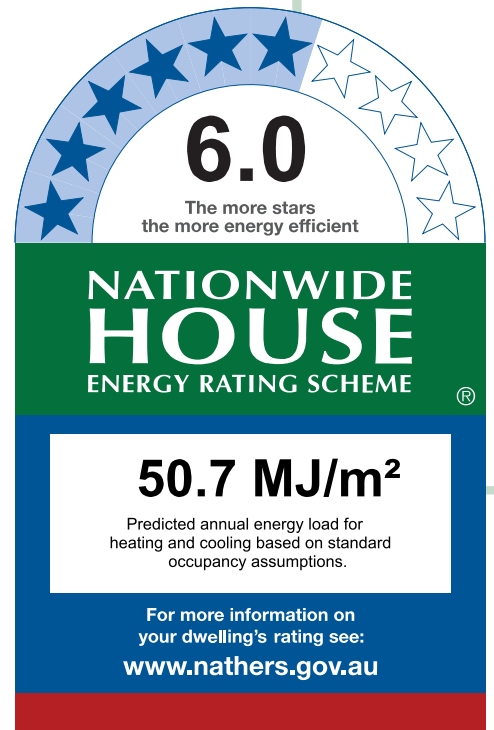
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

## National Construction Code (NCC) requirements

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## Thermal Performance

Heating	Cooling
<b>38.5</b>	<b>12.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06-j-a-a	1800	2100	Awning	27	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	STG-002-01 A	W05-m-a-a	1800	2100	Awning	27	S	None
Bedroom 03	STG-005-02 A	W04-p-a-a	2700	3021	Sliding	60	E	None
Kitchen/Living	STG-005-02 A	W01-t-a-a	2700	2100	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W02	2700	2100	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3627	S	2363	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2972	S	2340	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2928	S	2343	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	4135	E	3049	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5831	E	3040	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	33.4	2.00
INT-PB	Internal Plasterboard Stud Wall	81.9	0.00
INT-PB	Internal Plasterboard Stud Wall	18.4	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.5	N/A	0.00	Tile
Bathroom	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.0	N/A	0.00	Carpet
Bedroom 01	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.6	N/A	0.00	Carpet
Bedroom 02	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.7	N/A	0.00	Carpet
Bedroom 03	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Carpet

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.0	N/A	0.00	Tile
Ensuite	CSOG-200: Concrete Slab on Ground (200mm)	0.4	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	36.0	N/A	0.00	Tile
Kitchen/Living	CSOG-200: Concrete Slab on Ground (200mm)	1.6	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.2	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed

\* 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
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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-25W75P-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 420, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 46.6	Open
<b>Unconditioned*</b> 6.0	<b>NatHERS climate zone</b>
<b>Total</b> 52.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

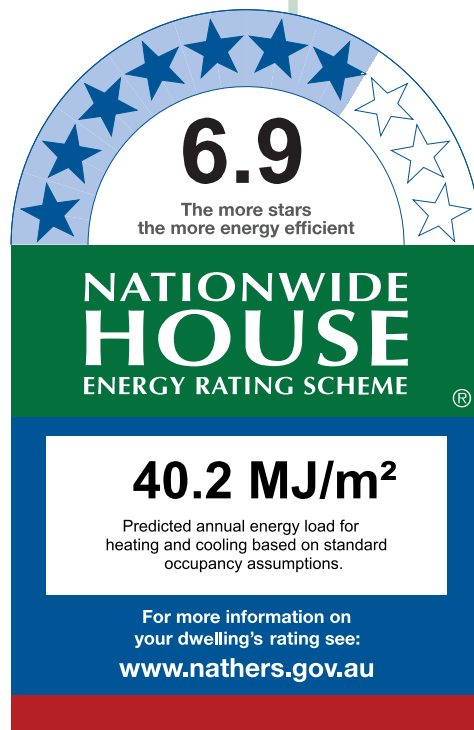
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

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### Thermal Performance

Heating	Cooling
<b>29.3</b>	<b>11.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-25W75P-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-f-a-a	2700	1945	Sliding	45	S	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-01 A	W02-s-a-a	2700	976	Casement	90	W	None
Kitchen/Living	STG-002-01 A	W03-k-a-a	1800	2400	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3112	S	3384	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1804	W	6439	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3705	S	1657	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	678	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	59.3	2.00
INT-PB	Internal Plasterboard Stud Wall	22.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.4	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & 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
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
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

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## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-RSXOCY-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 421, 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 <sup>2</sup> )*	Exposure Type
Conditioned*	46.6 Open
Unconditioned*	6.0 NatHERS climate zone
Total	52.5 56 - Mascot AMO
Garage	0.0



### Accredited assessor

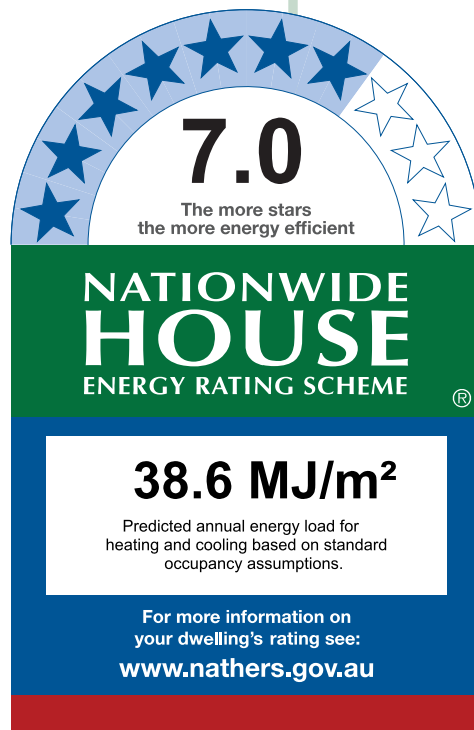
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>20.7</b>	<b>17.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-RSXOCY-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-b-a-a-a	2700	1945	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	STG-002-01 A	W03-e-a-a-a	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-001-01 A	W02-a-a-a-a	2700	932	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3111	S	3362	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3704	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1782	E	6439	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	60.0	2.00
INT-PB	Internal Plasterboard Stud Wall	23.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.4	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & 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
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-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-T4BUB9-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 422, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	66.3	Open
Unconditioned*	8.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>74.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

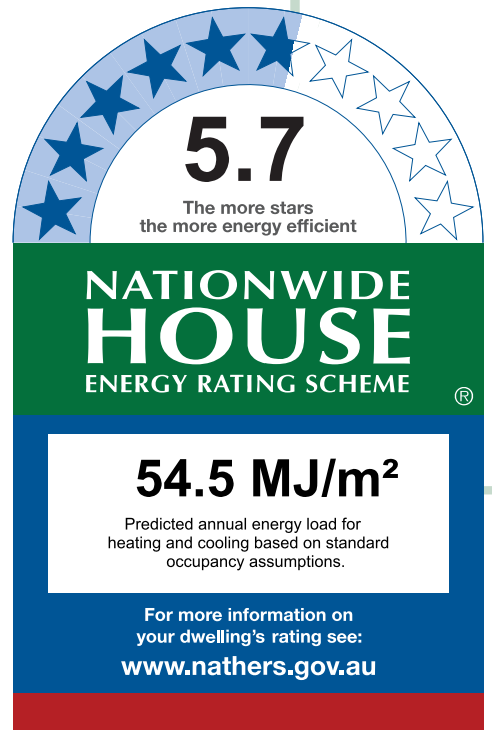
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>35.8</b>	<b>18.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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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Does this Certificate match the one available at the web address or QR code in the verification box on 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

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Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01-p-a-a	1800	2400	Awning	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 01	STG-005-02 A	W05-o-a	2700	1800	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W02-n-a-a	2700	2815	Sliding	45	S	None
Kitchen/Living	STG-005-02 A	W03-n-a-a	1800	1500	Sliding	45	W	None
Study	STG-005-02 A	W04-n-a-a	1800	1500	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 <sup>2</sup> )	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-A	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes
HEBEL-100-REFL-CAV1-B	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	3446	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	3386	W	3963	Yes
Bedroom 01	HEBEL-100-REFL-CAV1-A	2740	1615	E		Yes
Ensuite	HEBEL-100-REFL-CAV1-A	2740	1588	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3974	S	3459	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1-A	2740	3931	W		Yes
Study	HEBEL-100-REFL-CAV1-B	2740	3571	N		Yes
Study	HEBEL-100-REFL-CAV1-B	2740	2976	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	37.2	2.00
INT-PB	Internal Plasterboard Stud Wall	14.0	2.00
INT-PB	Internal Plasterboard Stud Wall	41.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	38.2	N/A	0.00	Carpet

\* Refer to glossary.



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Carpet
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.1	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	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	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
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

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<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-P3J2MA-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 423, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 68.2	Open
<b>Unconditioned*</b> 4.0	<b>NatHERS climate zone</b>
<b>Total</b> 72.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

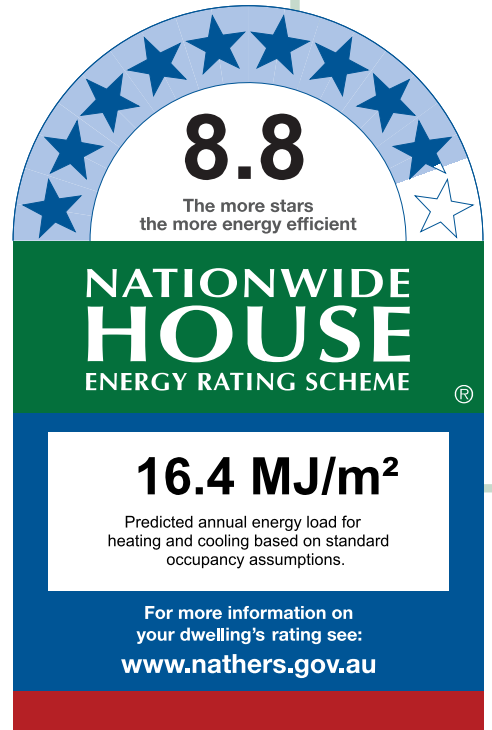
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>6.7</b>	<b>9.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-P3J2MA-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02-m-a-a-a	1800	1015	Awning	90	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 01	STG-005-02 A	W01-n-a-a-a	2700	1945	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04-g-a-a-a	2700	1760	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03-j-a-a-a	2700	2807	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3133	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1313	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1736	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1693	E	3139	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	3901	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3694	S	13282	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3959	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3827	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	658	E	3104	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	29.7	2.00
INT-PB	Internal Plasterboard Stud Wall	46.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	40.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	200	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 absorbance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-4AGG65-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 424, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 44.9	Open
<b>Unconditioned*</b> 4.1	<b>NatHERS climate zone</b>
<b>Total</b> 49.0	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**9.1**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**12.6 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>2.5</b>	<b>10.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06-c-a-a-a	2700	1850	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	STG-002-01 A	W01-j-a-a-a	1800	1022	Awning	90	N	None
Kitchen/Living	STG-005-02 A	W05-d-a-a-a	2700	1654	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2990	N	3005	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3612	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1910	W	3089	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.1	2.00
INT-PB	Internal Plasterboard Stud Wall	21.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	33.9	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed

\* Refer to glossary.





## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## 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) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-6YJWYK-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 425, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	72.2	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>76.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

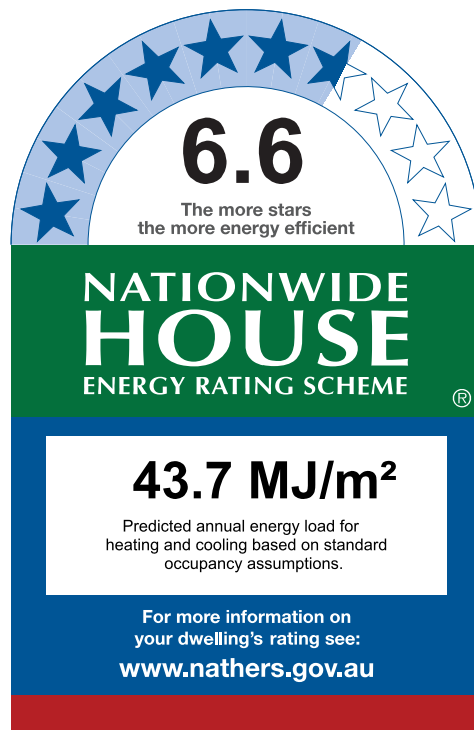
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>30.9</b>	<b>12.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-6YJWYK-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W04-n	600	1200	Awning	90	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 02	ALM-002-01 A	W03-y	2700	2700	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W02-{	2700	1906	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W01-{	2700	2351	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4943	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	327	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2966	W	2254	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3675	N		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2078	W	2256	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2227	N	5352	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	53.2	2.00
INT-PB	Internal Plasterboard Stud Wall	41.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	14.6	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	4.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.4	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-X62S86-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 426, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	72.0	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

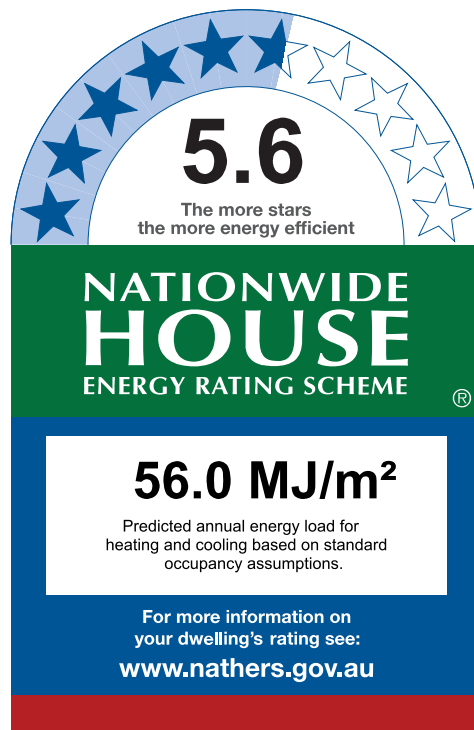
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>40.1</b>	<b>16.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-	1800	2400	Awning	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W04-o	2700	2390	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W03-z	2700	2475	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W02-	1800	950	Awning	90	E	None
Kitchen/Living	ALM-001-01 A	W05-g	1800	950	Awning	90	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	12	S		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4664	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2965	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	E	3329	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1605	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	S	3747	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3983	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.1	2.00
INT-PB	Internal Plasterboard Stud Wall	44.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.7	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.0	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.9	N/A	0.00	Tile

\* Refer to glossary.

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-IFJO94-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 427, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	61.0	Suburban
Unconditioned*	2.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>63.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**5.5**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**57.6 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>39.7</b>	<b>17.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-IFJO94-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-}	2700	2095	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-001-01 A	W01-	1800	2400	Awning	45	E	None
Kitchen/Living	ALM-002-01 A	W02-	2700	2021	Sliding	45	S	None
Study	ALM-002-01 A	W04-r	2700	900	Awning	60	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 <sup>2</sup> )	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*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	1587	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3048	E	2536	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3602	S	1216	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3585	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2552	S	4380	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3344	N	3986	Yes
Study	HEBEL-100-REFL-CAV1	2740	2868	S		Yes
Study	HEBEL-100-REFL-CAV1	2740	1164	E	6266	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	39.4	2.00
INT-PB	Internal Plasterboard Stud Wall	46.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.2	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.5	N/A	0.00	Tile
Storage	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.0	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.9	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-VPE0S1-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 428, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 45.2	Suburban
<b>Unconditioned*</b> 4.1	<b>NatHERS climate zone</b>
<b>Total</b> 49.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

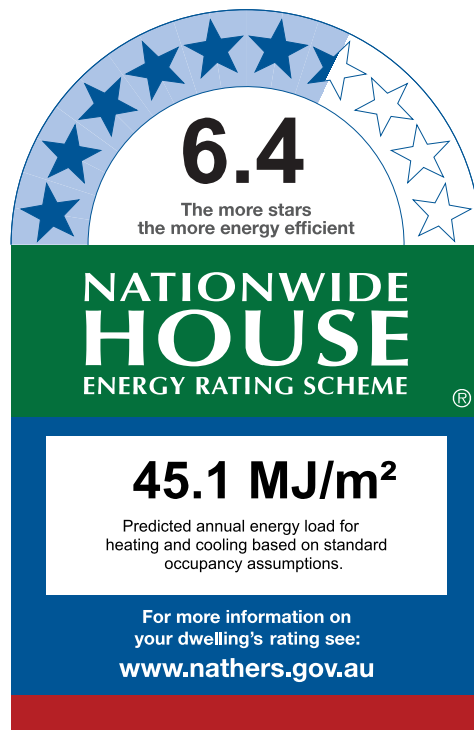
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>24.3</b>	<b>20.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-VPE0S1-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-~	2700	2400	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W02-	1800	2400	Awning	45	E	None
Kitchen/Living	ALM-002-01 A	W01-	2700	1878	Sliding	45	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3270	N	2677	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3175	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6901	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2329	E	3942	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	571	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	42.9	2.00
INT-PB	Internal Plasterboard Stud Wall	21.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	13.8	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.3	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	100	Sealed
Bedroom 01	2	Downlight	100	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
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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-S02N53-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 429, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	71.0	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.3</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

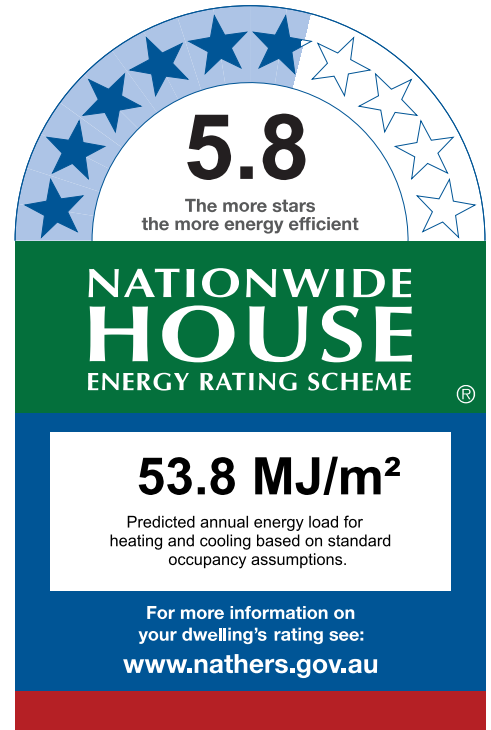
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>32.3</b>	<b>21.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-S02N53-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W04-j	2700	2186	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	W03-p	2700	1966	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W01-q	2700	3586	Sliding	45	S	None
Kitchen/Living	ALM-001-01 A	W05-e	1800	2400	Awning	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3014	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	408	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2977	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	714	E	8254	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8139	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4003	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.6	2.00
INT-PB	Internal Plasterboard Stud Wall	47.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.8	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	3.7	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.4	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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\* 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
Entry	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### 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).

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently 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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<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-RW9MA9-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 430, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	68.9	Suburban
Unconditioned*	3.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>72.5</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

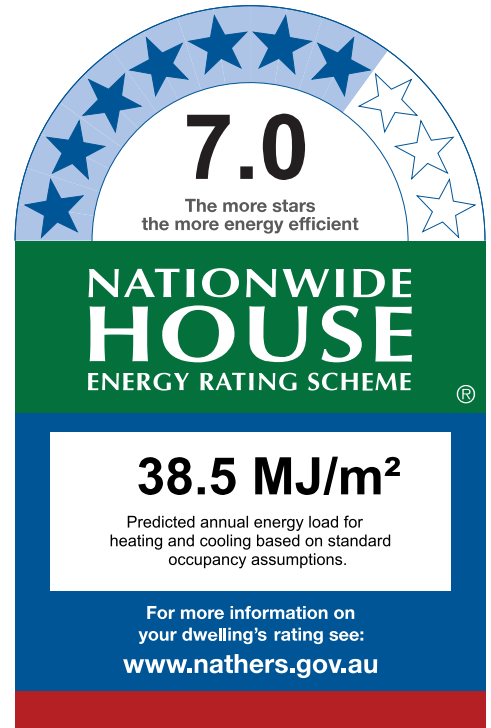
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>21.4</b>	<b>17.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-RW9MA9-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W03-x	1800	2400	Awning	27	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-001-01 A	W02-y	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01-y	2700	2731	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2996	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	388	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2962	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1249	W	4031	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3987	S	3207	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	73.0	2.00
INT-PB	Internal Plasterboard Stud Wall	42.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	14.3	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	3.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.4	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

\* 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
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

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## Explanatory Notes

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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-M82O9M-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 431, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	70.4	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>74.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

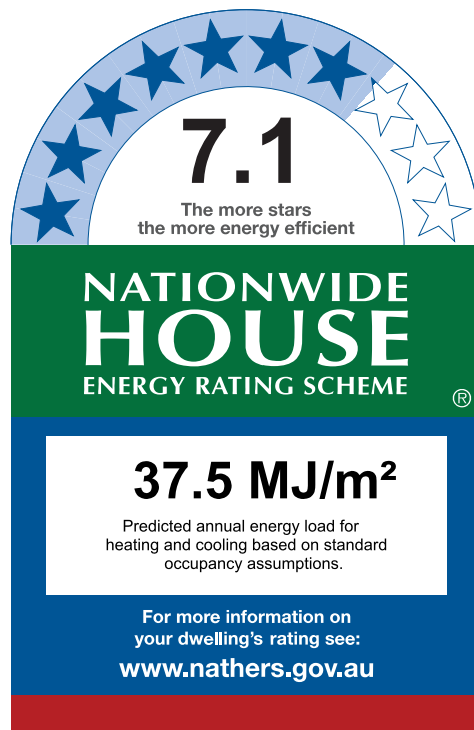
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

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### Thermal Performance

Heating	Cooling
<b>21.8</b>	<b>15.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

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Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

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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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01-x	1800	2400	Awning	27	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-002-01 A	W02-x	2700	1066	Fixed	0	S	None
Kitchen/Living	ALM-002-01 A	W03-w	2700	2773	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3014	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1588	E	5781	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1753	S	3235	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3861	S	3207	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	68.1	2.00
INT-PB	Internal Plasterboard Stud Wall	60.2	0.00
INT-PB	Internal Plasterboard Stud Wall	2.9	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.3	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	0.00	Tile
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	31.7	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.9	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed

\* Refer to glossary.

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	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.

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## Glossary

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<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-9CER3N-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 432, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	69.7	Suburban
Unconditioned*	7.6	<b>NatHERS climate zone</b>
<b>Total</b>	<b>77.3</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

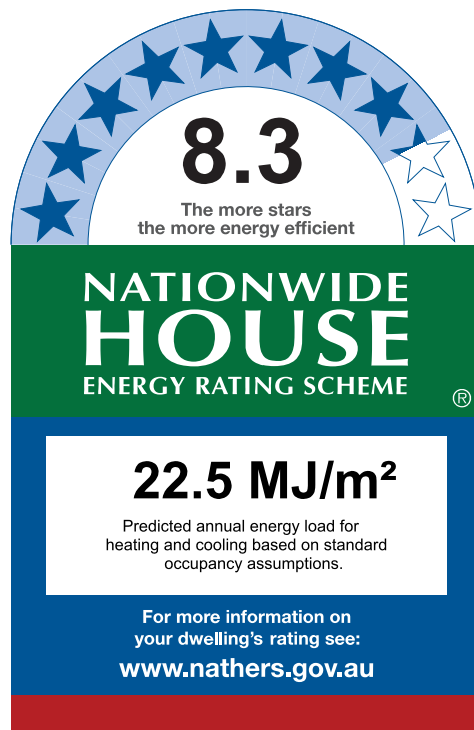
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>8.9</b>	<b>13.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-9CER3N-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-z	2700	1139	Awning	60	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-001-01 A	W01-z	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W08-b	2700	3110	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1567	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1749	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3055	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	N	2778	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1292	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	93.5	2.00
INT-PB	Internal Plasterboard Stud Wall	47.1	0.00
INT-PB	Internal Plasterboard Stud Wall	2.9	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.6	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.9	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
Hallway	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	38.8	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	2	Downlight	100	Sealed

\* Refer to glossary.





## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-MAFODF-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 433, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	43.7 Suburban
Unconditioned*	5.7 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.

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State and territory variations and additions to the NCC may also apply.

8.1  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**25.0 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
9.5	15.5
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-MAFODF-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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-t	2700	1147	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-01 A	W03-s	1800	2417	Awning	45	N	None
Kitchen/Living	ALM-002-01 A	W02-s	2700	2330	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3069	N	2991	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2709	E	2904	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	4186	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.2	2.00
INT-PB	Internal Plasterboard Stud Wall	31.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.1	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	22.1	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	100	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	3	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.



## Explanatory Notes

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-SNKGGN-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 434, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	48.3 Suburban
Unconditioned*	4.3 NatHERS climate zone
Total	52.6 56 - Mascot AMO
Garage	0.0



### Accredited assessor

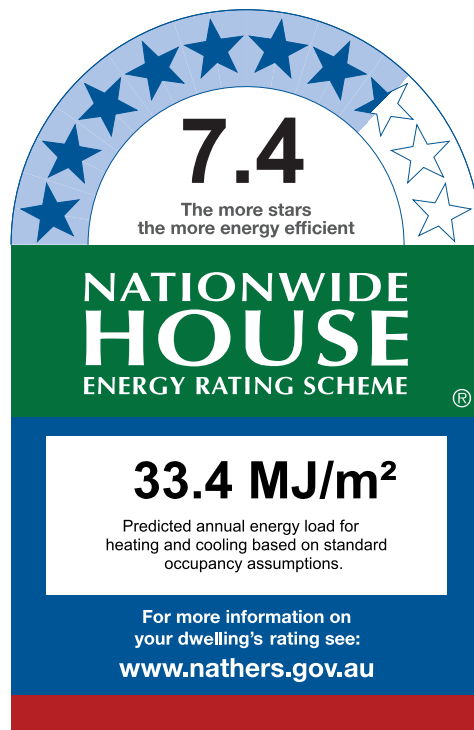
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>14.3</b>	<b>19.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-{	2700	1217	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-001-01 A	W01-}	1800	2263	Awning	45	N	None
Kitchen/Living	ALM-002-01 A	W02-}	2700	3271	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04-p	600	1200	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2308	N	4377	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3598	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5377	E	2188	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4975	W	3228	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.9	2.00
INT-PB	Internal Plasterboard Stud Wall	22.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.5	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed



### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

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<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-3FUK97-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 435, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	47.8 Suburban
Unconditioned*	8.5 NatHERS climate zone
Total	56.2 56 - Mascot AMO
Garage	0.0



### Accredited assessor

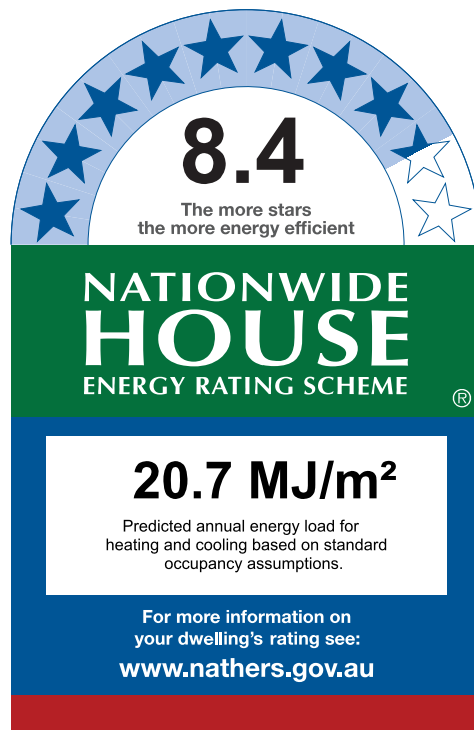
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>6.9</b>	<b>13.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-3FUK97-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-u	2700	1155	Sliding	45	W	None
Kitchen/Living	ALM-002-01 A	W01-v	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1778	W	3809	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	3749	N	2343	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2033	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	76.3	2.00
INT-PB	Internal Plasterboard Stud Wall	20.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.5	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
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\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-322SO5-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 436, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 97.2	Suburban
<b>Unconditioned*</b> 3.9	<b>NatHERS climate zone</b>
<b>Total</b> 101.1	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

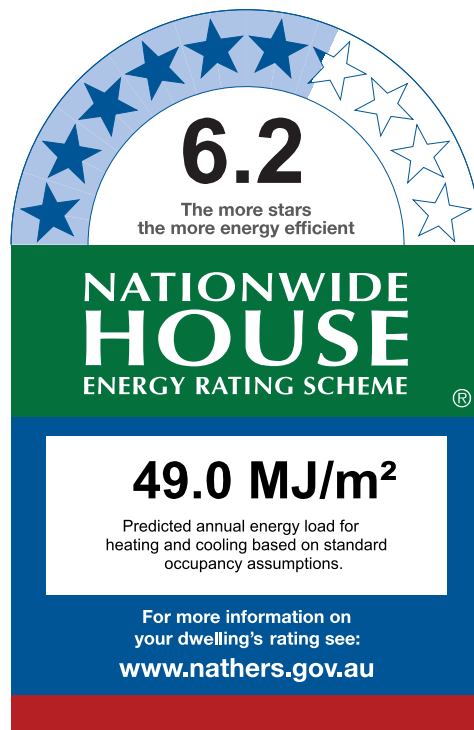
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>27.9</b>	<b>21.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-322SO5-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-h	2700	2151	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-001-01 A	W03-	1800	2400	Awning	27	S	None
Bedroom 03	ALM-001-01 A	W04-q	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01-~	2700	4507	Sliding	45	W	None
Kitchen/Living	ALM-001-01 A	W02-~	1800	2400	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2985	S	2668	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2990	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3027	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2634	E	5936	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5991	W	2692	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6342	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	66.3	2.00
INT-PB	Internal Plasterboard Stud Wall	64.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.6	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.6	N/A	0.00	Tile
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.9	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.8	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	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.

## Explanatory Notes

### About this report

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-VYB0SB-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 437, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type	
Conditioned*	44.3	Suburban
Unconditioned*	4.6	NatHERS climate zone
Total	48.9	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

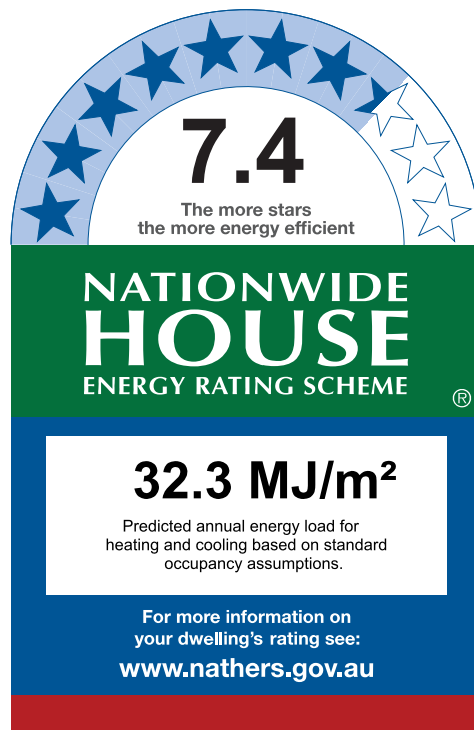
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>19.7</b>	<b>12.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-VYB0SB-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W04-I	2700	1165	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-u	2700	3340	Sliding	66	N	None
Kitchen/Living	ALM-001-04 A	W02-v	1800	2381	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2319	W	3599	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4752	N	2257	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1863	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3977	WNW	183	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	56.7	2.00
INT-PB	Internal Plasterboard Stud Wall	24.5	0.00
INT-PB	Internal Plasterboard Stud Wall	0.4	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.6	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

## 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a 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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<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-UZ2BNQ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 438, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.9	Suburban
Unconditioned*	4.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**32.3 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>17.7</b>	<b>14.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-UZ2BNQ-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-04 A	Aluminium A SG Low Solar Gain Low-E	5.60	0.36	0.34	0.38
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-q	2700	2100	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-001-04 A	W01-r	1800	2381	Awning	27	NW	None
Kitchen/Living	ALM-002-01 A	W02-q	2700	2562	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	614	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2417	W	3648	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4042	NW		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4539	N	2504	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3630	S	2842	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	49.7	2.00
INT-PB	Internal Plasterboard Stud Wall	23.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.6	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
Kitchen/Living	1	1200

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-VED8RQ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 439, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	81.9	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>87.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

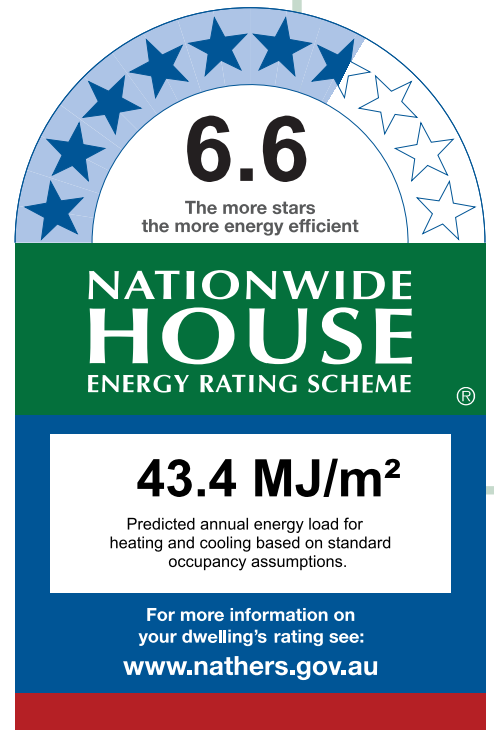
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>26.8</b>	<b>16.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-VED8RQ-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-t	2700	1500	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-001-01 A	W02-t	1800	1044	Awning	90	E	None
Kitchen/Living	ALM-002-01 A	W01-u	2700	2895	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2505	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	6182	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3901	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3421	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1781	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3839	W	4262	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6532	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	44.2	2.00
INT-PB	Internal Plasterboard Stud Wall	50.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.7	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	49.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium
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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-JB9MIM-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 440, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	79.2 Suburban
Unconditioned*	6.3 NatHERS climate zone
Total	85.5 56 - Mascot AMO
Garage	0.0



### Accredited assessor

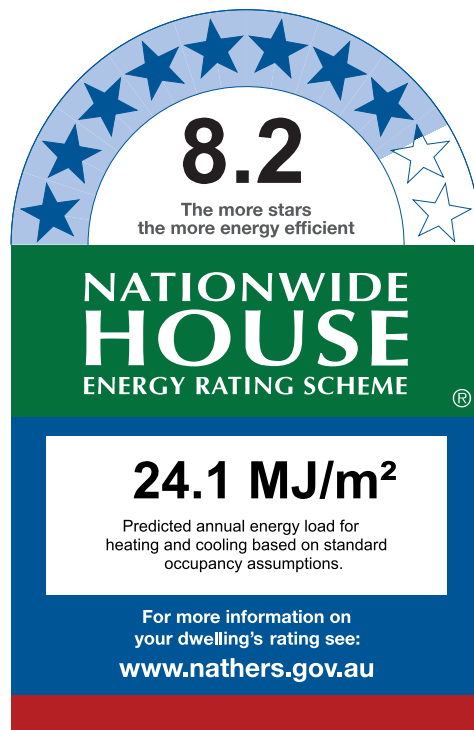
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>13.9</b>	<b>10.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, 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 installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W03-r	2700	1081	Awning	60	S	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-001-01 A	W01-s	1800	1121	Awning	90	N	None
Kitchen/Living	ALM-002-01 A	W02-r	2700	3073	Sliding	45	N	None
Study	ALM-001-01 A	W04-k	1800	1130	Awning	90	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1623	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3016	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3599	W		Yes
Hallway	HEBEL-100-REFL-CAV1	2740	2117	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3982	N	2771	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1362	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	1938	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	79.1	2.00
INT-PB	Internal Plasterboard Stud Wall	62.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.3	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.5	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	9.1	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.5	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	100	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			

\* Refer to glossary.

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

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Australian Capital Territory (ACT) licenced assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-579KY2-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 441, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	92.1	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>97.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

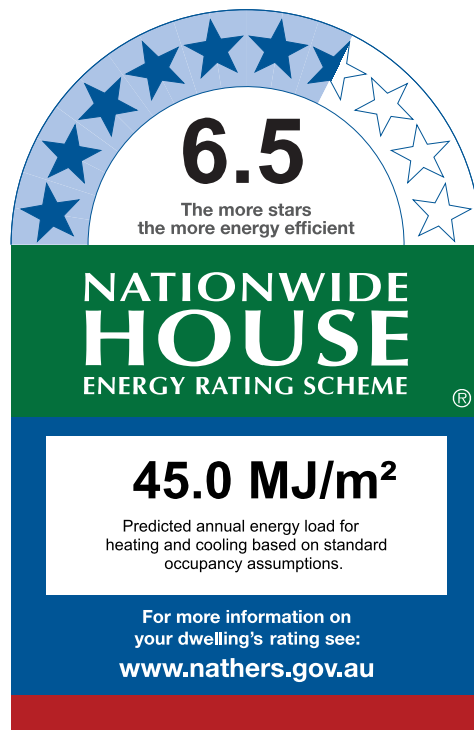
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>29.1</b>	<b>15.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-579KY2-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W07-b	600	900	Awning	90	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W06-b	1800	2400	Awning	27	S	None
Bedroom 01	ALM-002-01 A	W05-f	2700	1799	Sliding	45	W	None
Bedroom 02	ALM-002-01 A	W02-w	2700	1800	Sliding	45	E	None
Bedroom 02	ALM-001-01 A	W01-w	1800	2400	Awning	27	S	None
Bedroom 03	ALM-002-01 A	W03-v	2700	1500	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W04-m	2700	2724	Sliding	66	S	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.



## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4848	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3303	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2163	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2582	W	3712	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	E	10103	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3112	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2413	S	3091	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4191	S	2163	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	928	W	2597	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	317	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.6	2.00
INT-PB	Internal Plasterboard Stud Wall	64.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.0	N/A	0.00	Carpet

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.3	N/A	0.00	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.6	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
----------	----------	---------------

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.



## Explanatory Notes

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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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.

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-2TDLGF-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 501, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	100.3	Open
Unconditioned*	5.7	<b>NatHERS climate zone</b>
<b>Total</b>	106.0	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

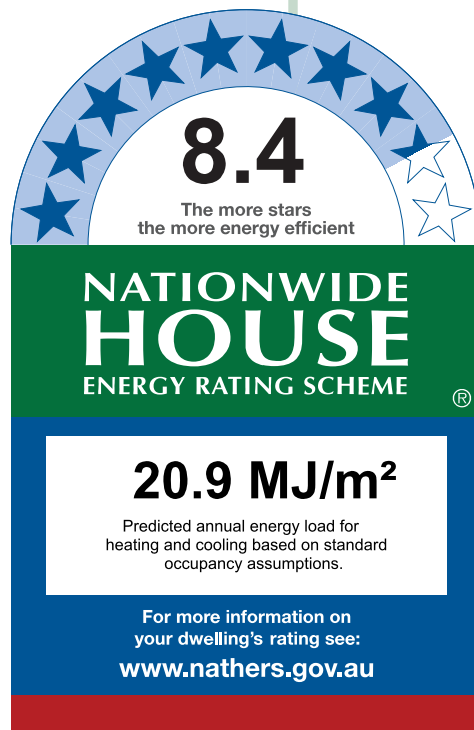
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>6.1</b>	<b>14.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-2TDLGF-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06	1800	2100	Awning	27	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W05	1800	2100	Awning	27	E	None
Bedroom 03	STG-005-02 A	W01	2700	2400	Sliding	45	N	None
Kitchen/Living	STG-005-02 A	W02	2700	3600	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W03	2700	1185	Awning	60	N	None
WIR	STG-002-01 A	W04	2700	600	Awning	60	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3725	E	540	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3281	E	540	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1503	N	3220	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3832	N	1611	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	360	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8891	N	1622	Yes
WIR	HEBEL-100-REFL-CAV1	2740	1503	N	1611	Yes
WIR	HEBEL-100-REFL-CAV1	2740	1503	E	1583	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	62.0	2.00
INT-PB	Internal Plasterboard Stud Wall	89.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.9	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.9	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.5	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.3	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.2	N/A	0.00	Tile

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	41.9	N/A	0.00	Tile
Linen	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.1	N/A	0.00	Tile
WIR	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	2.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Linen	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
WIR	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	1	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Hallway	1	Downlight	200	Sealed
Kitchen/Living	6	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Linen	1	Downlight	200	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) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-O1FHZL-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 502, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	106.3	Open
Unconditioned*	4.8	<b>NatHERS climate zone</b>
<b>Total</b>	111.1	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

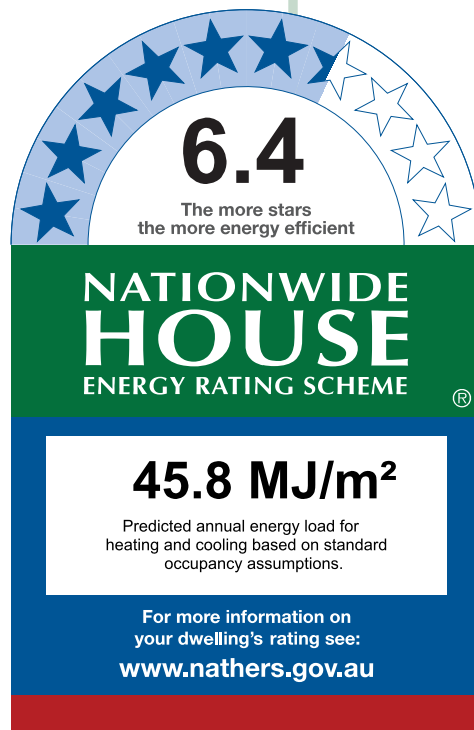
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### 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
<b>35.8</b>	<b>10.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W05	2700	2100	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	STG-002-01 A	W06	1800	2400	Awning	27	S	None
Bedroom 03	STG-005-02 A	W04	2700	1990	Sliding	45	S	None
Kitchen/Living	STG-002-01 A	W01	1800	2100	Awning	27	E	None
Kitchen/Living	STG-002-01 A	W02	1800	2100	Awning	27	E	None
Kitchen/Living	STG-005-02 A	W03	2700	2700	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2991	S	2336	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3556	S	1658	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1779	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	678	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3112	E	3758	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3598	S	2336	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6901	E	540	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3218	S	5553	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	61.1	2.00
INT-PB	Internal Plasterboard Stud Wall	77.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.3	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	17.9	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.8	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	8.0	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	9.7	N/A	0.00	Tile

\* Refer to glossary.



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	46.6	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Entry	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	3	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Entry	1	Downlight	200	Sealed
Kitchen/Living	7	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		



## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium



## Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-YX7LEM-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 503, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	70.5	Open
Unconditioned*	7.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>77.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**5.5**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**57.7 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>40.9</b>	<b>16.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-YX7LEM-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01-b-a-a-a-a	2700	1945	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	STG-002-01 A	W03-e-a-a-a-a	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-001-01 A	W02-a-a-a-a-a	2700	932	Casement	90	E	None
Living 341	STG-005-02 A	W04	2700	1945	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 <sup>2</sup> )	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*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3095	S	3365	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4030	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	217	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1782	E	6113	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	323	N		Yes
Living 341	HEBEL-100-REFL-CAV1	2740	3006	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	69.0	2.00
INT-PB	Internal Plasterboard Stud Wall	57.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.7	N/A	0.00	Carpet
Day Time 94	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.3	N/A	0.00	Tile
Living 341	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.4	N/A	0.00	Carpet
Living 342	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.2	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Day Time 94	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Living 341	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Living 342	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	200	Sealed
Day Time 94	1	Downlight	200	Sealed
Day Time 94	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	200	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Living 341	2	Downlight	200	Sealed
Living 342	1	Downlight	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium
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## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-T2LDHA-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 504, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 66.3	Open
<b>Unconditioned*</b> 8.5	<b>NatHERS climate zone</b>
<b>Total</b> 74.8	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

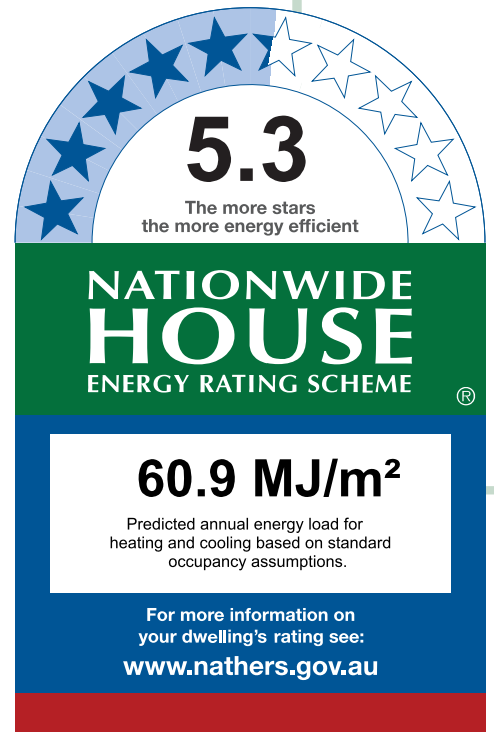
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

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### Thermal Performance

Heating	Cooling
<b>44.8</b>	<b>16.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

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## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W01-p-a-a-a	1800	2400	Awning	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 01	STG-005-02 A	W05-o-a-a	2700	1800	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W02-n-a-a-a	2700	2815	Sliding	45	S	None
Kitchen/Living	STG-005-02 A	W03-n-a-a-a	1800	1500	Sliding	45	W	None
Study	STG-005-02 A	W04-n-a-a-a	1800	1500	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3446	S		No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3386	W	3963	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1615	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1588	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3974	S	3459	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3931	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	3571	N		Yes
Study	HEBEL-100-REFL-CAV1	2740	2976	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	37.0	2.00
INT-PB	Internal Plasterboard Stud Wall	14.0	2.00
INT-PB	Internal Plasterboard Stud Wall	41.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	38.2	N/A	0.00	Carpet
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.5	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.1	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	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
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	2.68	0.50	Medium
SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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.

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**Address** 505, 4 Delmar Parade, DEE WHY, NSW, 2099

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**NCC Class\*** 2

**Type** New

### Plans

**Main Plan** Project No. 221054

**Prepared by** Rothe Lowman

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Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 98.9	Open
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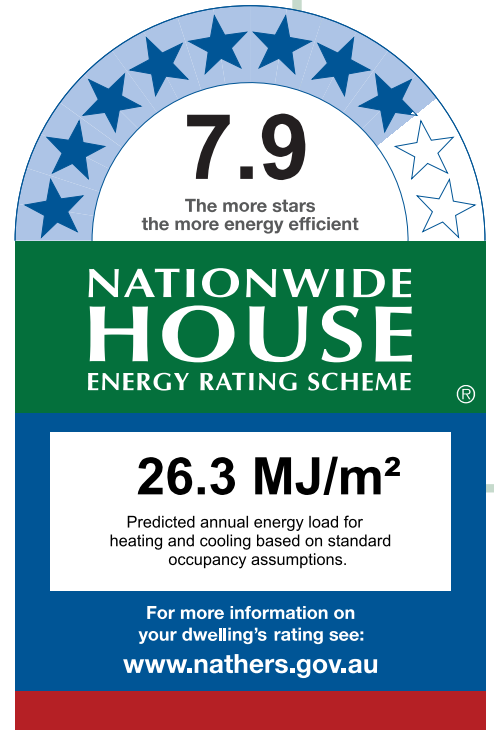
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
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### Thermal Performance

Heating	Cooling
<b>16.1</b>	<b>10.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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

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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
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
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STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W03	1800	1015	Awning	90	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 01	STG-005-02 A	W04	2700	1800	Sliding	45	E	None
Bedroom 01	STG-005-02 A	W02	2700	2100	Sliding	45	W	None
Bedroom 02	STG-002-01 A	W06	1800	1500	Awning	45	W	None
Bedroom 03	STG-005-02 A	W01	2700	2540	Sliding	45	N	None
Bedroom 03	STG-002-01 A	W07	1800	1500	Awning	45	W	None
Kitchen/Living	STG-005-02 A	W05	2700	4045	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3154	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3387	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	593	N	2904	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2900	W	3901	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3535	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3005	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3132	N	2904	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	4213	W		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2011	N	2716	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4784	N	2716	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	46.6	2.00
INT-PB	Internal Plasterboard Stud Wall	67.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	16.6	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.6	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	54.4	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-GREEN-01: Concrete Slab (200mm) with Green Roof (500mm) & Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	200	Sealed
Bedroom 01	2	Downlight	200	Sealed
Bedroom 02	2	Downlight	200	Sealed
Bedroom 03	2	Downlight	200	Sealed
Ensuite	1	Downlight	200	Sealed
Kitchen/Living	8	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) & Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-NEYM8P-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 506, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	90.7 Open
Unconditioned*	5.4 NatHERS climate zone
Total	96.1 56 - Mascot AMO
Garage	0.0



### Accredited assessor

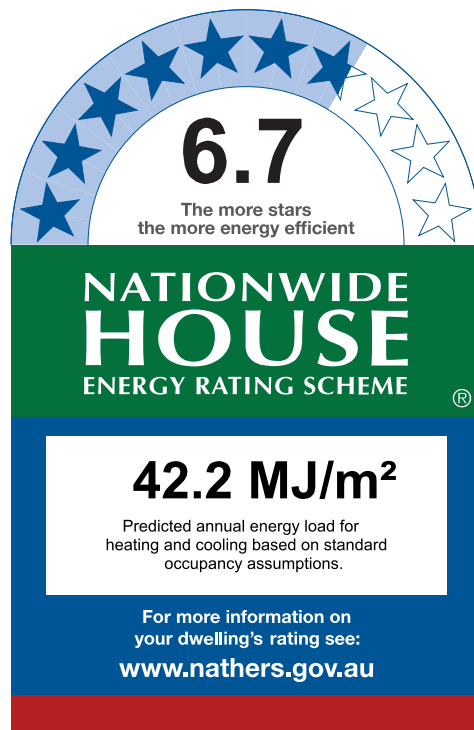
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>20.7</b>	<b>21.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-NEYM8P-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	2374	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 02	ALM-002-01 A	W06	2700	2395	Sliding	45	E	None
Bedroom 03	ALM-001-01 A	W03	2700	1195	Casement	90	N	None
Bedroom 03	ALM-002-01 A	W04	2700	2379	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W02	2700	3357	Sliding	60	N	None
Study	ALM-002-01 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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3598	N	2435	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2970	E		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3995	S		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3998	N	2442	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3006	E		No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	12	S		No
Entry	HEBEL-100-REFL-CAV1	2740	1988	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4942	N	2435	No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4933	S		Yes
Study	HEBEL-100-REFL-CAV1	2740	1650	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	24.4	2.00
INT-PB	Internal Plasterboard Stud Wall	78.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	0.00	Carpet
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.0	N/A	0.00	Carpet

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.7	N/A	0.00	Carpet
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.4	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	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

\* Refer to glossary.





## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-U67MPA-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 507, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	45.2 Open
Unconditioned*	4.0 NatHERS climate zone
Total	49.2 56 - Mascot AMO
Garage	0.0



### Accredited assessor

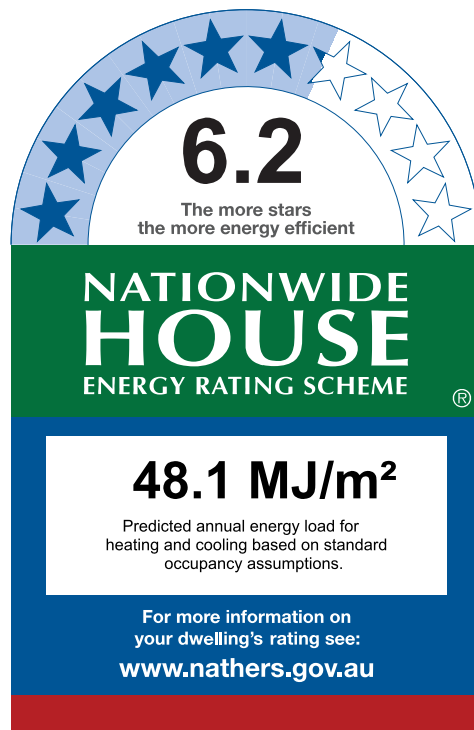
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

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### Thermal Performance

Heating	Cooling
26.8	21.3
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-U67MPA-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-02 A	Aluminium A SG Tint	6.60	0.41	0.39	0.43
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-02 A	W01	1800	2400	Awning	27	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	1810	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3193	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3294	N	2267	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2316	E	3918	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6887	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	549	N	2233	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	43.1	2.00
INT-PB	Internal Plasterboard Stud Wall	21.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.9	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	31.3	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-0GK6W2-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 508, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	70.9	Open
Unconditioned*	4.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

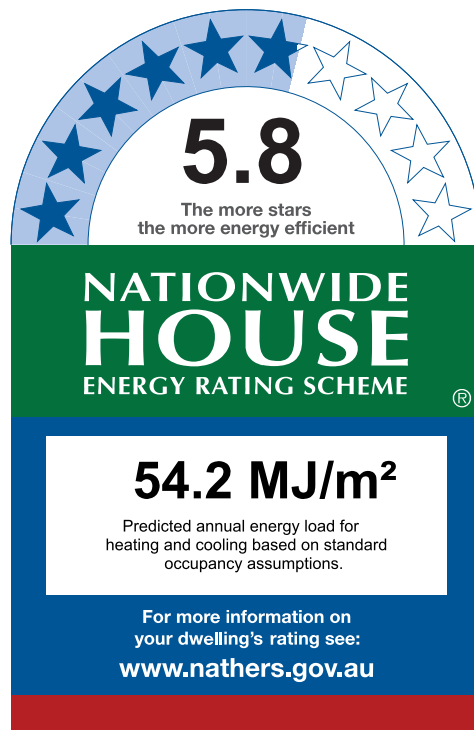
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>42.6</b>	<b>11.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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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 this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.40	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window 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	2121	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-002-03 A	W03	2700	1936	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W01	2700	3586	Sliding	45	S	None
Kitchen/Living	ALM-001-03 A	W05	1800	2400	Awning	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2971	S	1867	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2998	S	1868	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	714	E	8224	Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	324	N		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	107	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	8112	S	2576	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3998	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	73.0	2.00
INT-PB	Internal Plasterboard Stud Wall	48.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.7	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	3.7	N/A	0.00	Tile
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	33.0	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	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	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

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<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-YU7L7E-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 509, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	68.9 Open
Unconditioned*	3.8 NatHERS climate zone
Total	72.7 56 - Mascot AMO
Garage	0.0



### Accredited assessor

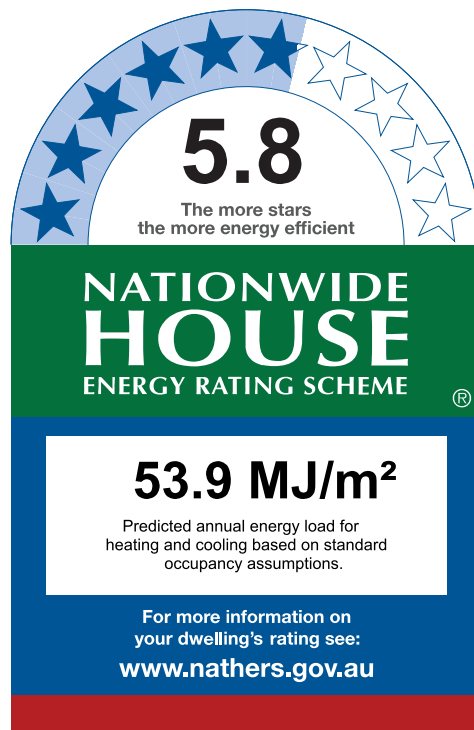
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>37.7</b>	<b>16.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-YU7L7E-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W03	1800	2400	Awning	27	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-001-01 A	W02	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01	2700	2797	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2992	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2985	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1256	W	4029	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3960	S	3211	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	309	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	72.4	2.00
INT-PB	Internal Plasterboard Stud Wall	45.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	11.5	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	36.1	N/A	0.00	Tile
Laundry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.2	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

\* Refer to glossary.

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	1	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
Laundry	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	2.68	0.50	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-T8HPT9-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 510, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	70.0 Open
Unconditioned*	3.8 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](http://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

**49.9 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>35.7</b>	<b>14.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

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\* Refer to glossary.

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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W01	1800	2400	Awning	27	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-002-01 A	W02	2700	1055	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W03	2700	2771	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1593	E	5799	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2992	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1665	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3858	S	3214	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	70.7	2.00
INT-PB	Internal Plasterboard Stud Wall	59.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.3	N/A	0.00	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.7	N/A	0.00	Tile
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	31.4	N/A	0.00	Tile
Living 1	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*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No





## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Living 1	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	3	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Living 1	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	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-7EKT6P-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 511, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	69.7 Open
Unconditioned*	7.6 NatHERS climate zone
Total	77.3 56 - Mascot AMO
Garage	0.0



### Accredited assessor

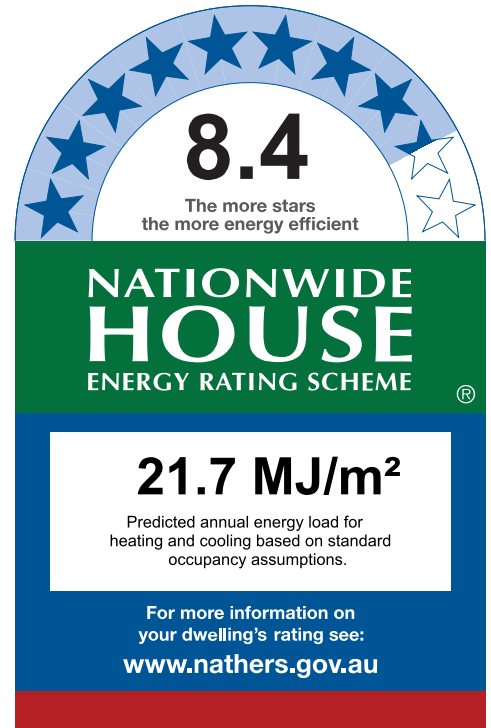
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>12.0</b>	<b>9.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-7EKT6P-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1176	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-001-01 A	W01	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W08	2700	3110	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1538	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1693	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3042	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4000	N	2778	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	98.8	2.00
INT-PB	Internal Plasterboard Stud Wall	45.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.6	N/A	0.00	Carpet
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	11.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	45.0	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	2	Downlight	100	Sealed
Bathroom	2	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
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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## Explanatory Notes

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\* Refer to glossary.



# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-6XBHY7-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 512, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	43.6 Open
Unconditioned*	5.8 NatHERS climate zone
Total	49.4 56 - Mascot AMO
Garage	0.0



### Accredited assessor

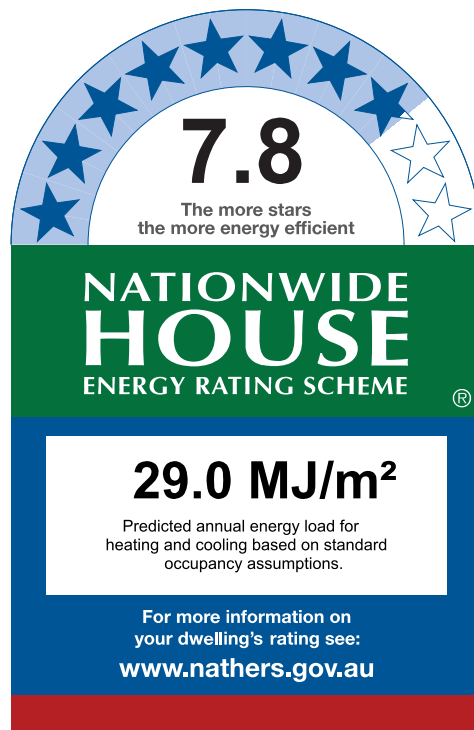
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>12.4</b>	<b>16.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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 the ‘number’ and ‘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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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-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	1395	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-001-01 A	W03	1800	2400	Awning	27	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	2330	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3069	N	2991	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2709	E	2905	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	4186	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.9	2.00
INT-PB	Internal Plasterboard Stud Wall	32.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	12.6	N/A	0.00	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	22.1	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	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	3	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	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-8S92DF-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 513, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	47.4 Open
Unconditioned*	3.8 NatHERS climate zone
Total	51.2 56 - Mascot AMO
Garage	0.0



### Accredited assessor

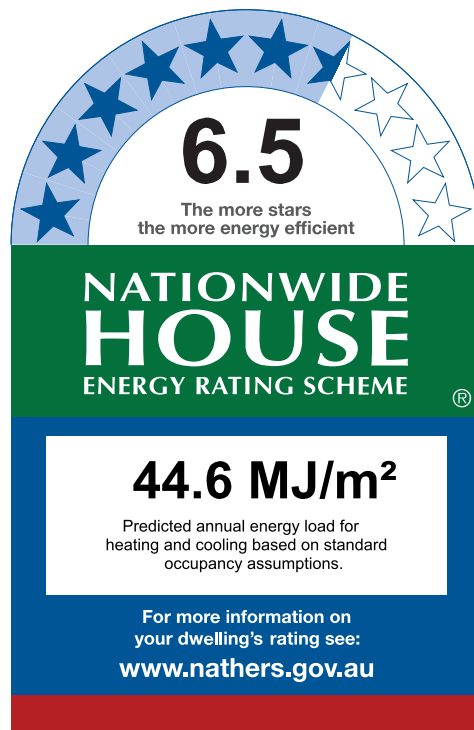
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
26.8	17.8
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-8S92DF-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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*
Berroom 01	ALM-002-01 A	W03	2700	1183	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-001-01 A	W01	1800	2400	Awning	27	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3375	Sliding	45	E	None
Kitchen/Living	ALM-001-01 A	W04	600	1200	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Berroom 01	HEBEL-100-REFL-CAV1	2740	2308	N	4377	Yes
Entry	HEBEL-100-REFL-CAV1	2740	25	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3598	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5377	E	2188	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4975	W	3228	Yes
Laundry	HEBEL-100-REFL-CAV1	2740	350	E		Yes
Laundry	HEBEL-100-REFL-CAV1	2740	23	E		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	45.8	2.00
INT-PB	Internal Plasterboard Stud Wall	30.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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*
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## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Berom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Berom 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	2.68	0.50	Medium

\* Refer to glossary.

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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-AFQD27-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 514, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 48.4	Open
<b>Unconditioned*</b> 9.3	<b>NatHERS climate zone</b>
<b>Total</b> 57.7	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

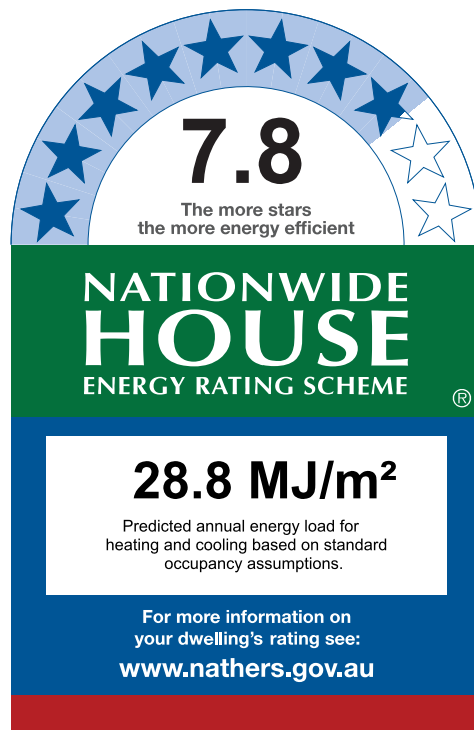
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>18.0</b>	<b>10.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-AFQD27-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02	2700	1150	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*
Bedroom 01	ALM-001-01 A	W03	2700	1200	Casement	90	N	None
Bedroom 01	ALM-001-01 A	W04	2700	1200	Awning	60	N	None
Kitchen/Living	ALM-002-01 A	W01	2700	2690	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 <sup>2</sup> )	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*

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1567	E	13014	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1778	W	3809	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4626	N	2465	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3749	N	2343	Yes
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 <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	58.5	2.00
INT-PB	Internal Plasterboard Stud Wall	20.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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*
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## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-ZIHJ76-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 515, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	98.9 Open
Unconditioned*	3.7 NatHERS climate zone
Total	102.6 56 - Mascot AMO
Garage	0.0



### Accredited assessor

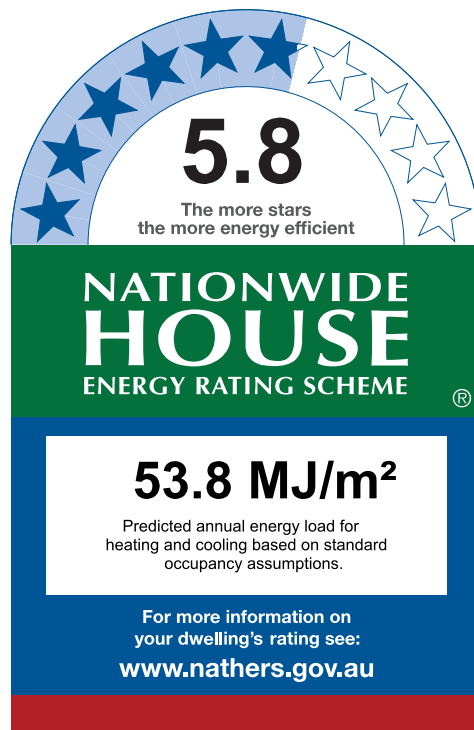
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
37.9	15.9
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-ZIHJ76-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05	2700	2177	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-001-01 A	W04	1800	2400	Awning	27	S	None
Bedroom 03	ALM-001-01 A	W03	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-001-01 A	W02	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01	2700	4534	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2936	S	2135	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2232	E	16608	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3004	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6345	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6005	W	3052	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	69.0	2.00
INT-PB	Internal Plasterboard Stud Wall	63.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	16.7	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	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Tile
Entry Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.8	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
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry Hallway	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-MA8D32-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 516, 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 <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 44.7	Open
<b>Unconditioned*</b> 4.5	<b>NatHERS climate zone</b>
<b>Total</b> 49.1	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>29.0</b>	<b>18.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-MA8D32-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W04	2700	1165	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	3960	Sliding	66	N	None
Kitchen/Living	ALM-001-01 A	W01	1800	2400	Awning	27	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2298	W	3621	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4783	N	2126	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1863	S	6372	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3977	WNW		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.8	2.00
INT-PB	Internal Plasterboard Stud Wall	25.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.0	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	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
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-F9YUW0-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 517, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 81.9	Open
<b>Unconditioned*</b> 4.3	<b>NatHERS climate zone</b>
<b>Total</b> 86.2	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

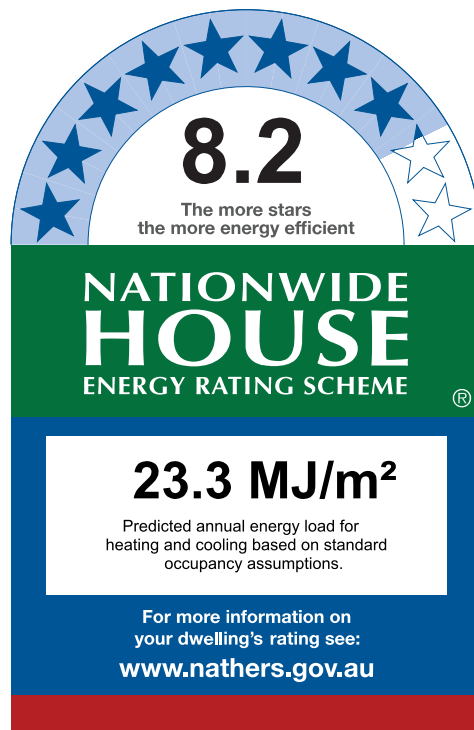
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>9.5</b>	<b>13.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W06	2700	985	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W02	2700	2100	Sliding	45	N	None
Bedroom 02	ALM-001-01 A	W01	1800	2400	Awning	27	WNW	None
Kitchen/Living	ALM-002-01 A	W03	2700	2400	Sliding	45	WNW	None
Kitchen/Living	ALM-002-01 A	W04	1100	1000	Fixed	0	NNW	None
Study	ALM-002-01 A	W05	1100	1000	Fixed	0	NNW	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3771	NNW	257	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4403	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3238	N	4208	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3976	WNW		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3581	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1609	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	306	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2392	N	4208	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3826	WNW	5514	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3884	NNW	283	Yes
Study	HEBEL-100-REFL-CAV1	2740	2423	NNW	279	Yes
Study	HEBEL-100-REFL-CAV1	2740	307	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	55.0	2.00
INT-PB	Internal Plasterboard Stud Wall	44.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.5	N/A	0.00	Carpet

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof Colour
None			



## Explanatory Notes

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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently 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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<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-S946TG-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 518, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	78.0 Open
Unconditioned*	6.3 NatHERS climate zone
Total	84.3 56 - Mascot AMO
Garage	0.0



### Accredited assessor

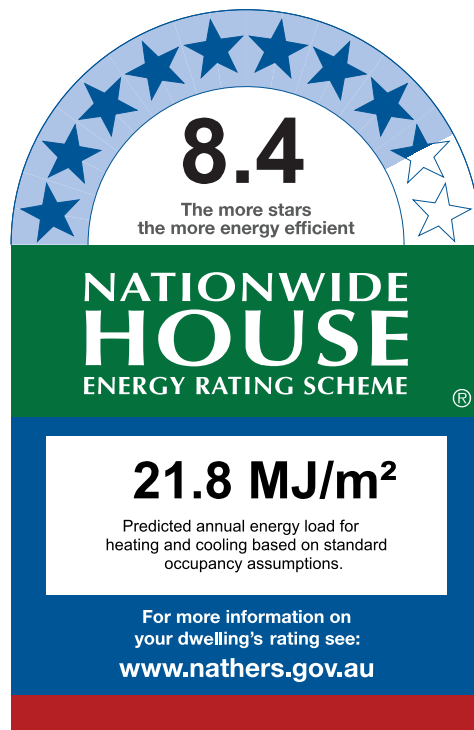
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>12.5</b>	<b>9.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-S946TG-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed 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	1156	Sliding	45	N	None
Bedroom 01	ALM-002-01 A	W03	2700	1145	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-002-01 A	W01	2700	1140	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	3046	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3552	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3009	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1622	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1691	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3979	N	2773	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	154	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	173	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1351	W		Yes
eNTRYU	HEBEL-100-REFL-CAV1	2740	2116	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	77.4	2.00
INT-PB	Internal Plasterboard Stud Wall	63.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	23.8	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.6	N/A	0.00	Carpet
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	6.3	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.1	N/A	0.00	Tile
eNTRYU	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.2	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	4	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
eNTRYU	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-3U8APB-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 519, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 87.9	Open
<b>Unconditioned*</b> 3.7	<b>NatHERS climate zone</b>
<b>Total</b> 91.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

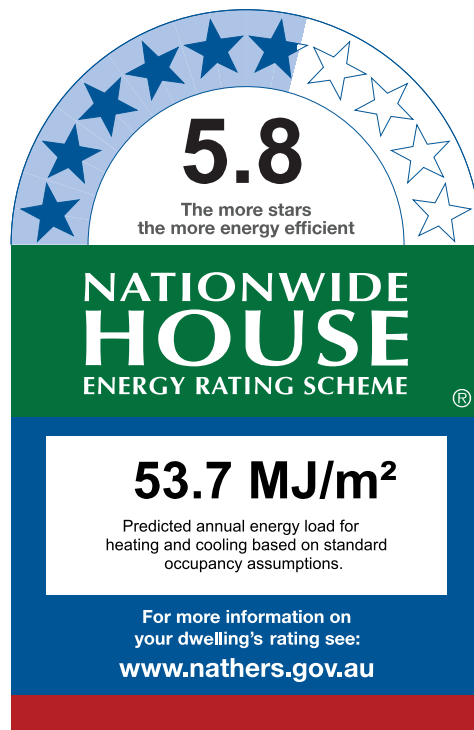
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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### Thermal Performance

Heating	Cooling
<b>34.3</b>	<b>19.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-3U8APB-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W03	1800	2400	Awning	27	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-002-01 A	W02	2700	1781	Sliding	45	S	None
Kitchen/Living	ALM-002-01 A	W06	2700	1827	Sliding	45	S	None
Study	ALM-002-01 A	W01	2700	3027	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 <sup>2</sup> )	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*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3144	S	28	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2147	W	3691	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2126	E	10106	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2038	S	2140	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4433	S	2138	Yes
Study	HEBEL-100-REFL-CAV1	2740	2725	E		Yes
Study	HEBEL-100-REFL-CAV1	2740	3254	S	2168	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	82.5	2.00
INT-PB	Internal Plasterboard Stud Wall	62.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.9	N/A	0.00	Carpet
Bedroom 02	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	5.1	N/A	0.00	Tile
Hallway 2	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	41.9	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	8.8	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	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
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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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

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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

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<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-BZ9CDL-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 601, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 98.9	Open
<b>Unconditioned*</b> 3.7	<b>NatHERS climate zone</b>
<b>Total</b> 102.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

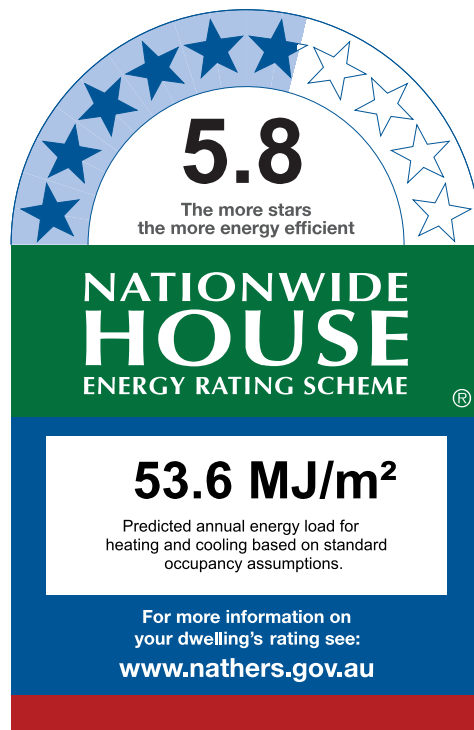
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>37.8</b>	<b>15.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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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 this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-c	2700	2177	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-001-01 A	W04-f	1800	2400	Awning	27	S	None
Bedroom 03	ALM-001-01 A	W03-i	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-001-01 A	W02-i	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01-j	2700	4534	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2936	S	2135	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2232	E	16607	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3004	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6345	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6005	W	3052	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	69.0	2.00
INT-PB	Internal Plasterboard Stud Wall	63.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	16.7	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	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Tile
Entry Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.8	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
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Entry Hallway	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

## Explanatory Notes

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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-74FT2J-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 602, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.7	Open
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

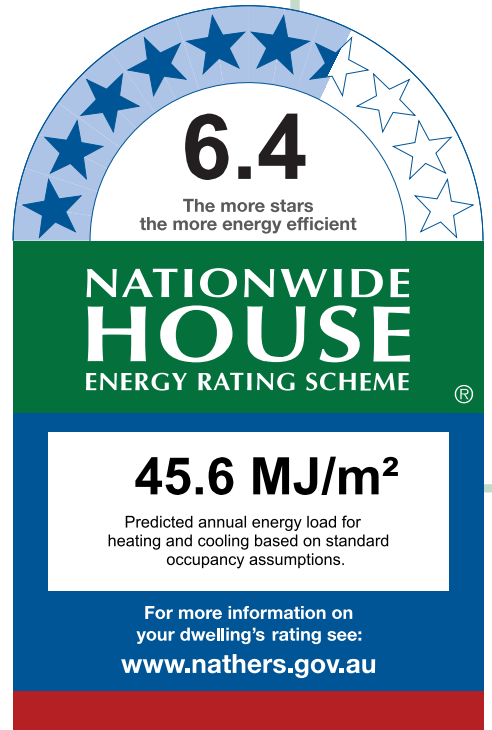
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>28.4</b>	<b>17.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-74FT2J-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W04-c	2700	1165	Sliding	45	W	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-002-01 A	W03-c	2700	3960	Sliding	66	N	None
Kitchen/Living	ALM-001-01 A	W01-c	1800	2400	Awning	27	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2298	W	3621	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4783	N	2126	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1863	S	6372	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3977	WNW		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.8	2.00
INT-PB	Internal Plasterboard Stud Wall	25.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.0	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-8G3EKW-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 603, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	81.9 Open
Unconditioned*	4.3 NatHERS climate zone
Total	86.2 56 - Mascot AMO
Garage	0.0



### Accredited assessor

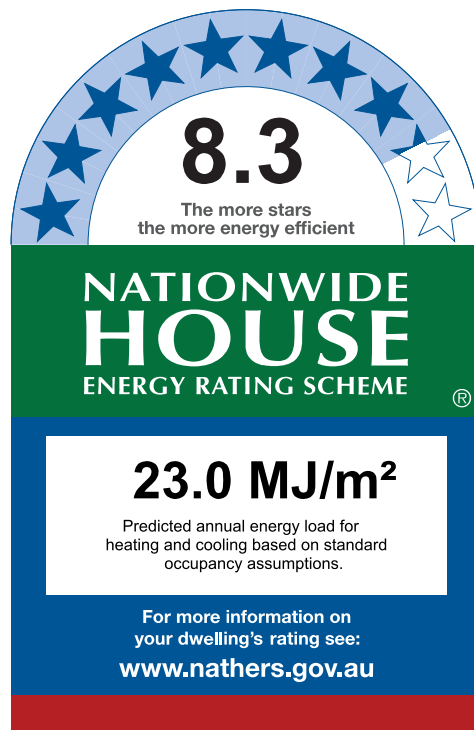
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
9.2	13.8
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-8G3EKW-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W06-a	2700	985	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 02	ALM-002-01 A	W02-b	2700	2100	Sliding	45	N	None
Bedroom 02	ALM-001-01 A	W01-b	1800	2400	Awning	27	WNW	None
Kitchen/Living	ALM-002-01 A	W03-b	2700	2400	Sliding	45	WNW	None
Kitchen/Living	ALM-002-01 A	W04-b	1100	1000	Fixed	0	NNW	None
Study	ALM-002-01 A	W05-a	1100	1000	Fixed	0	NNW	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3771	NNW	258	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4403	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3238	N	4208	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3976	WNW		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3581	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1609	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	306	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2392	N	4208	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3826	WNW	5514	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3884	NNW	283	Yes
Study	HEBEL-100-REFL-CAV1	2740	2423	NNW	279	Yes
Study	HEBEL-100-REFL-CAV1	2740	307	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	55.0	2.00
INT-PB	Internal Plasterboard Stud Wall	44.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.5	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof Colour
None			

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	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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<b>Entrance door</b>	these signify ventilation benefits 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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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-LQO425-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 604, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	100.3 Open
Unconditioned*	5.3 NatHERS climate zone
Total	105.7 56 - Mascot AMO
Garage	0.0



### Accredited assessor

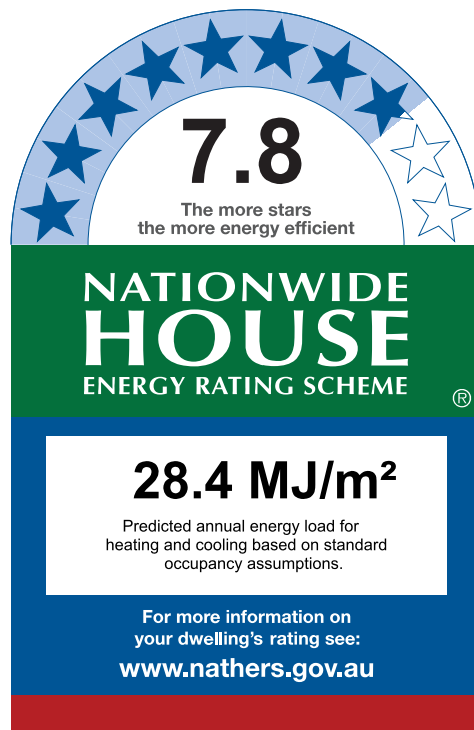
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>18.8</b>	<b>9.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-LQO425-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W02-k	2700	1156	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 01	ALM-001-01 A	W01	1800	1200	Awning	90	N	None
Bedroom 02	ALM-002-01 A	W04	2700	2100	Sliding	45	E	None
Bedroom 03	ALM-001-01 A	W03	2700	900	Awning	60	E	None
Kitchen/Living	ALM-002-01 A	W05	2700	3410	Sliding	60	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	1674	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2978	W		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4801	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	98	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	4001	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3048	E	3773	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	4284	NNW		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1334	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3514	W		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	2709	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6147	E	3773	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5525	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	16.7	2.00
INT-PB	Internal Plasterboard Stud Wall	68.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.4	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	17.0	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.9	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	45.0	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
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

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## Explanatory Notes

### About this report

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-DFYH1K-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 605, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	104.3 Open
Unconditioned*	5.5 NatHERS climate zone
Total	109.7 56 - Mascot AMO
Garage	0.0



### Accredited assessor

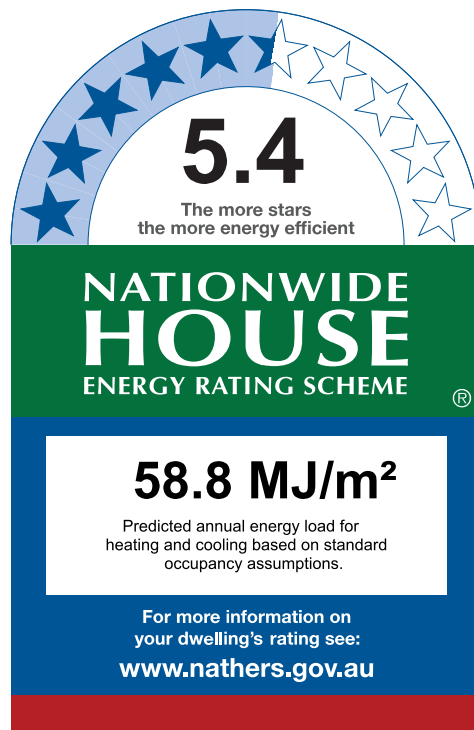
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

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State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>44.7</b>	<b>14.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.40	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.80	0.51	0.48	0.54

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
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## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-03 A	W03-e	1800	2400	Awning	27	S	None
Bedroom 02	ALM-002-03 A	W02-d	2700	1954	Sliding	45	S	None
Bedroom 03	ALM-002-03 A	W01	2700	2392	Sliding	45	S	None
Kitchen/Living	ALM-002-03 A	W06-b	2700	3097	Sliding	60	S	None
Kitchen/Living	ALM-003-01 A	W04	2700	1200	Awning	60	S	None
Kitchen/Living	ALM-002-03 A	W05	2700	3745	Sliding	60	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3144	S	5	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2147	W	3669	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2187	E	10084	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	S	2187	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3006	S	2165	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3741	S	2202	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1777	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3003	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5399	E	2682	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3036	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	63.8	2.00
INT-PB	Internal Plasterboard Stud Wall	78.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	18.9	N/A	0.00	Carpet

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.2	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.1	N/A	0.00	Tile
Hallway 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.6	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	44.2	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	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	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorbptance	Roof Colour
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## 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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<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a 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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<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-OGNT4T-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 701, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
<b>Conditioned*</b> 98.9	Open
<b>Unconditioned*</b> 3.7	<b>NatHERS climate zone</b>
<b>Total</b> 102.6	56 - Mascot AMO
<b>Garage</b> 0.0	



### Accredited assessor

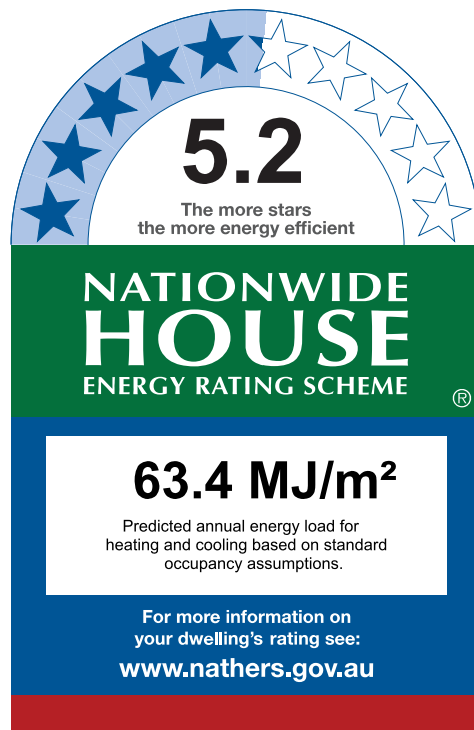
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>45.1</b>	<b>18.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-OGNT4T-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W05-c-a	2700	2177	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-001-01 A	W04-f-a	1800	2400	Awning	27	S	None
Bedroom 03	ALM-001-01 A	W03-i-a	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-001-01 A	W02-i-a	1800	2400	Awning	27	S	None
Kitchen/Living	ALM-002-01 A	W01-j-a	2700	4534	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
DG-Generic-02 A	Clear AI DG Default Roof Window System 02	4.22	0.72	0.68	0.76

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	DG-Generic-02 A	SKYRW 03	0	1503	614	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2936	S	2135	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	S		No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2232	E	16607	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3004	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6345	S		No
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	6005	W	3052	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	69.0	2.00
INT-PB	Internal Plasterboard Stud Wall	63.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	16.7	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	10.9	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.0	N/A	0.00	Tile
Entry Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	16.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.8	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Entry Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
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 Hallway	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour



## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-FL94CF-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 702, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.7	Open
Unconditioned*	4.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

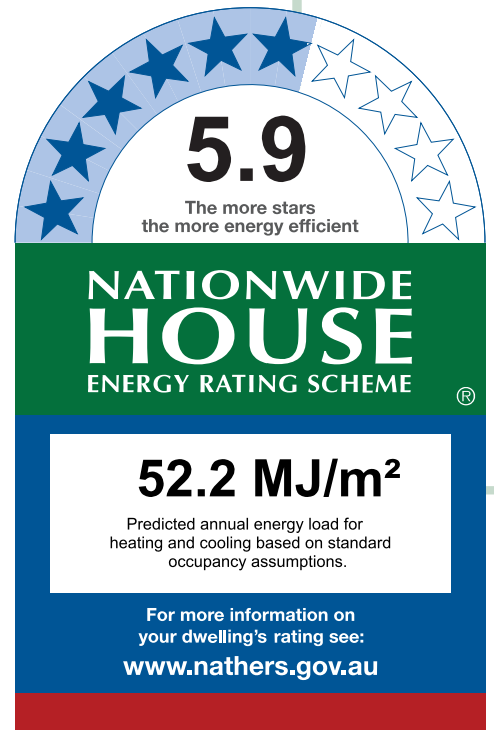
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>31.9</b>	<b>20.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-FL94CF-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W04-c-a	2700	1165	Sliding	45	W	None

\* Refer to glossary.





## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-002-01 A	W03-c-a	2700	3960	Sliding	66	N	None
Kitchen/Living	ALM-001-01 A	W01-c-a	1800	2400	Awning	27	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
DG-Generic-02 A	Clear AI DG Default Roof Window System 02	4.22	0.72	0.68	0.76

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	DG-Generic-02 A	SKYRW 04	0	1503	593	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2298	W	3621	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4783	N	2126	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1863	S	6372	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3977	WNW		No

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	57.8	2.00
INT-PB	Internal Plasterboard Stud Wall	25.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	10.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	34.0	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-2QTUT2-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 703, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	81.9 Open
Unconditioned*	4.3 NatHERS climate zone
Total	86.2 56 - Mascot AMO
Garage	0.0



### Accredited assessor

**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**27.0 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>11.8</b>	<b>15.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-2QTUT2-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-002-01 A	W06-a-a	2700	985	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W02-b-a	2700	2100	Sliding	45	N	None
Bedroom 02	ALM-001-01 A	W01-b-a	1800	2400	Awning	27	WNW	None
Kitchen/Living	ALM-002-01 A	W03-b-a	2700	2400	Sliding	45	WNW	None
Kitchen/Living	ALM-002-01 A	W04-b-a	1100	1000	Fixed	0	NNW	None
Study	ALM-002-01 A	W05-a-a	1100	1000	Fixed	0	NNW	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
DG-Generic-02 A	Clear AI DG Default Roof Window System 02	4.22	0.72	0.68	0.76

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	DG-Generic-02 A	SKYRW 05	0	614	1503	N	None	None

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3771	NNW	258	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4403	E		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3238	N	4208	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3976	WNW		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3581	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1609	E		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	306	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2392	N	4208	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3826	WNW	5514	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3884	NNW	283	Yes
Study	HEBEL-100-REFL-CAV1	2740	2423	NNW	279	Yes
Study	HEBEL-100-REFL-CAV1	2740	307	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	55.0	2.00
INT-PB	Internal Plasterboard Stud Wall	44.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	15.5	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.4	N/A	0.00	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## 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
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	2.68	0.50	Medium



## Explanatory Notes

### About this report

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## Glossary

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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-S0111A-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 704, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	121.5	Open
Unconditioned*	5.2	<b>NatHERS climate zone</b>
<b>Total</b>	<b>126.7</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

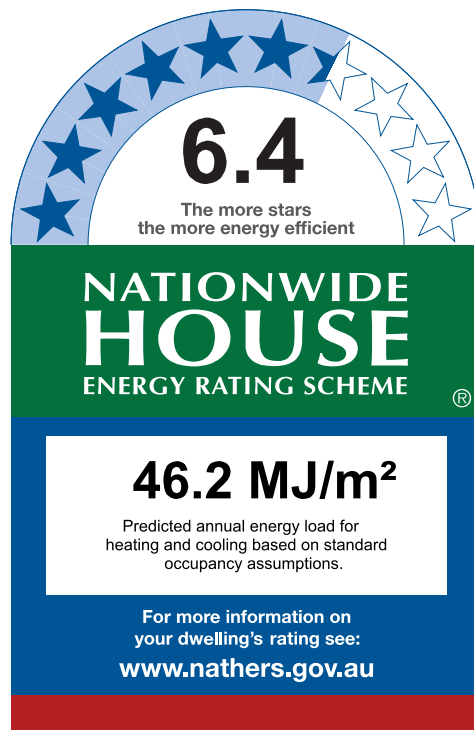
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>33.7</b>	<b>12.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-S0111A-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W04	2700	2100	Sliding	45	E	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-002-01 A	W02-k-a	2700	1156	Sliding	45	N	None
Bedroom 03	ALM-001-01 A	W03-a	2700	900	Awning	60	E	None
Kitchen/Living	ALM-002-01 A	W05-d	2700	2246	Sliding	60	E	None
Kitchen/Living	ALM-002-01 A	W01	2700	3410	Sliding	45	E	None
Study	ALM-001-01 A	W06	2700	1200	Awning	60	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
DG-Generic-02 A	Clear AI DG Default Roof Window System 02	4.22	0.72	0.68	0.76

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	DG-Generic-02 A	SKYRW 02	0	1503	593	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.00	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3197	E	3683	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4107	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3570	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2987	N		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	4284	NNW		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	2736	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1328	E		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	144	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4008	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	7877	E	3686	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	658	W		Yes
Laundry	HEBEL-100-REFL-CAV1	2740	2113	W		Yes
Study	HEBEL-100-REFL-CAV1	2740	1990	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	30.4	2.00
INT-PB	Internal Plasterboard Stud Wall	102.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.4	N/A	0.00	Tile

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	10.4	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
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	7.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	53.8	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	6.6	N/A	0.00	Carpet
WIR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	6.2	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	0.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
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Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
WIR	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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Entry	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed
WIR	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-J5UA0A-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** 705, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type
Conditioned*	104.3 Open
Unconditioned*	5.5 NatHERS climate zone
Total	109.7 56 - Mascot AMO
Garage	0.0



### Accredited assessor

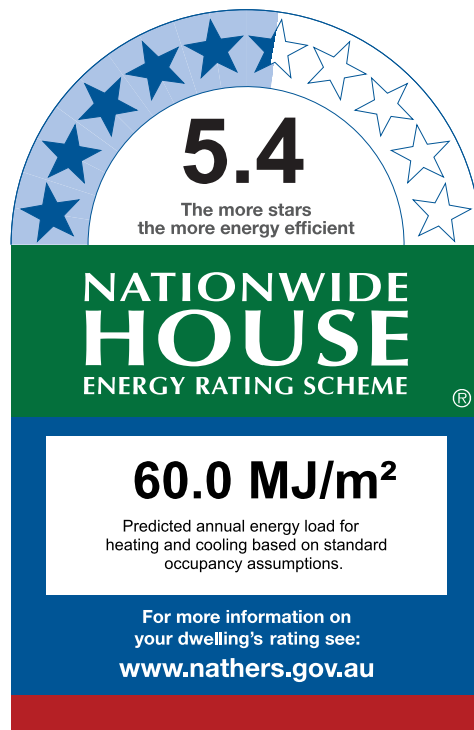
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### 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](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
39.6	20.4
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-J5UA0A-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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	W03-e-a	1800	2400	Awning	27	S	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	ALM-004-01 A	W02-d-a	2700	1954	Sliding	45	S	None
Bedroom 03	ALM-004-01 A	W01-a	2700	2392	Sliding	45	S	None
Kitchen/Living	ALM-004-01 A	W06-b-a	2700	3097	Sliding	60	S	None
Kitchen/Living	ALM-003-01 A	W04-a	2700	1200	Awning	60	S	None
Kitchen/Living	ALM-004-01 A	W05-b	2700	3745	Sliding	60	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
DG-Generic-02 A	Clear AI DG Default Roof Window System 02	4.22	0.72	0.68	0.76

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Kitchen/Living	DG-Generic-02 A	SKYRW 01	0	1503	593	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3144	S	5	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2147	W	3669	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2187	E	10084	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	S	2187	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3006	S	2165	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3741	S	2202	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1777	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3003	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5399	E	2682	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	70.8	2.00
INT-PB	Internal Plasterboard Stud Wall	58.3	0.00
INT-PB	Internal Plasterboard Stud Wall	20.6	2.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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	18.9	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
Bedroom 03	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	0.00	Carpet

## Floor type

Location	Construction	Area (m <sup>2</sup> )	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
Hallway 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.5	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	44.2	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	2.00	No
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.00	No
Bedroom 02	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.00	No
Bedroom 03	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.00	No
Hallway 2	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	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

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium



## Explanatory Notes

### About this report

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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-CU49C0-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G.15, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a//342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	68.3	Suburban
Unconditioned*	4.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>73.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

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**6.9**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**39.1 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>21.8</b>	<b>17.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

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### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper 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	1286	Sliding	45	W	None
Bedroom 2	ALM-002-01 A	W01	2700	1950	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 15	ALM-002-01 A	W02	2700	2339	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 <sup>2</sup> )	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-CAV11	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-CAV11	2740	1377	W		Yes
Bedroom 1	HEBEL-100-REFL-CAV11	2740	224	WSW		Yes
Bedroom 2	HEBEL-100-REFL-CAV11	2740	2981	N		Yes
Bedroom 2	HEBEL-100-REFL-CAV11	2740	3577	W	3404	Yes
Kitchen/Living 15	HEBEL-100-REFL-CAV11	2740	2216	N	5180	Yes
Kitchen/Living 15	HEBEL-100-REFL-CAV11	2740	4001	W	10224	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	76.5	2.00
INT-PB	Internal Plasterboard Stud Wall	40.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.7	N/A	1.42	Tile
Bedroom 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.9	N/A	1.42	Carpet
Bedroom 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	9.8	N/A	1.42	Carpet
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.8	N/A	1.42	Tile
Kitchen/Living 15	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	40.6	N/A	1.42	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	1.42	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
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\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 1	2	Downlight	100	Sealed
Bedroom 2	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living 15	5	Downlight	100	Sealed
Kitchen/Living 15	1	Exhaust Fan	350	Sealed
Pantry	1	Downlight	100	Sealed
Pantry	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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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-JADG6Z-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G.16, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	71.5	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>75.3</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

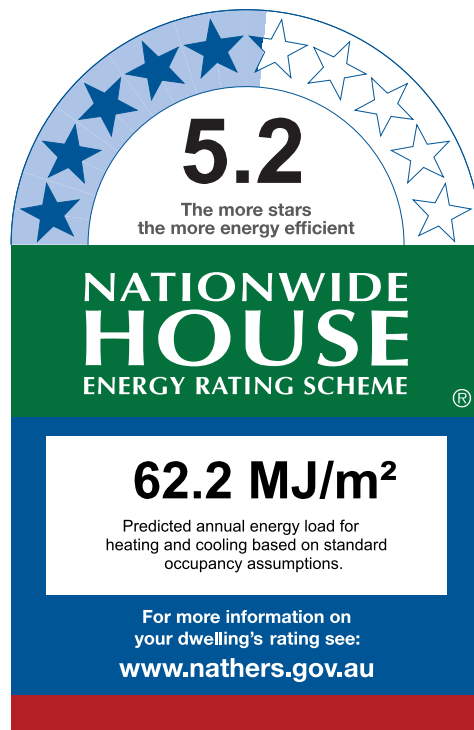
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>44.3</b>	<b>17.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-JADG6Z-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>



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## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed 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	1500	1200	Awning	90	W	None
Bedroom 02	ALM-002-01 A	W01	2700	2463	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	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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-CAV11	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-CAV11	2740	3567	N		No
Bedroom 01	HEBEL-100-REFL-CAV11	2740	1670	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV11	2740	2954	W	1592	Yes
Bedroom 02	HEBEL-100-REFL-CAV11	2740	2997	N	2568	Yes
Ensuite	HEBEL-100-REFL-CAV11	2740	2417	N		No
Entry	HEBEL-100-REFL-CAV11	2740	336	W		Yes
Hallway	HEBEL-100-REFL-CAV11	2740	307	E		Yes
kitchen/living	HEBEL-100-REFL-CAV11	2740	8110	N		No
kitchen/living	HEBEL-100-REFL-CAV11	2740	4057	E	3369	Yes
kitchen/living	HEBEL-100-REFL-CAV11	2740	1878	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	52.3	2.00
INT-PB	Internal Plasterboard Stud Wall	50.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.5	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.6	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	1.42	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.4	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.9	N/A	1.42	Tile
bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	1.42	Tile
kitchen/living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.9	N/A	1.42	Tile



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Ensuite	1	Downlight	100	Sealed
Hallway	1	Downlight	100	Sealed
bathroom	1	Exhaust Fan	350	Sealed
bathroom	1	Downlight	100	Sealed
kitchen/living	7	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

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-BVQRUP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G.17, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	74.1	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>77.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

**Name** Duncan Hope

**Business name** Senica Consultancy Group

**Email** duncan@senica.com.au

**Phone** +61 280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN

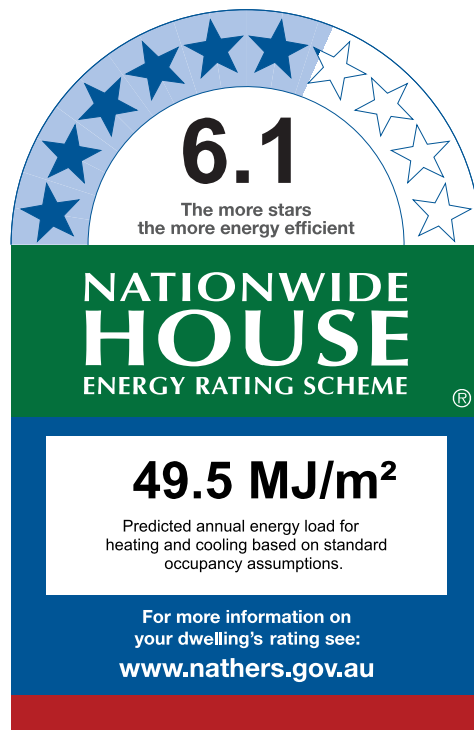
**Declaration of interest** No Conflict of Interest

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### Thermal Performance

Heating	Cooling
<b>24.0</b>	<b>25.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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	
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Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
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None					

## Window and glazed 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	2700	Sliding	45	E	None
Bedroom 02	ALM-002-01 A	W02	2700	981	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	W01	2700	3195	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04	2700	1995	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 <sup>2</sup> )	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-CAV11	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-CAV11	2740	3860	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV11	2740	593	S		Yes
Bedroom 02	HEBEL-100-REFL-CAV11	2740	3263	E	5845	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	4022	E	3286	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	2557	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	70.5	2.00
INT-PB	Internal Plasterboard Stud Wall	53.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.4	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.8	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.1	N/A	1.42	Tile
Hallway	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.4	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	39.5	N/A	1.42	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed

\* Refer to glossary.

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	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

## 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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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-Y3P824-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G.18, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	74.3	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>78.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

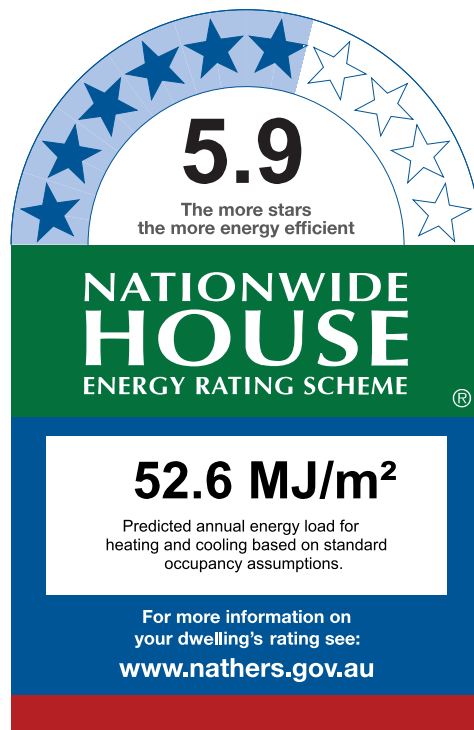
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>43.6</b>	<b>9.0</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-Y3P824-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper 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	W04	2700	1080	Double Hung	45	E	None
Bedroom 2	ALM-002-01 A	W01	2700	2645	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 2	ALM-002-01 A	W03	600	1095	Awning	90	S	None
Kitchen/Living	ALM-002-01 A	W02	2700	3135	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 <sup>2</sup> )	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-CAV11	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 1	HEBEL-100-REFL-CAV11	2740	3447	S		Yes
Bedroom 1	HEBEL-100-REFL-CAV11	2740	1501	E		Yes
Bedroom 1	HEBEL-100-REFL-CAV11	2740	645	S		Yes
Bedroom 2	HEBEL-100-REFL-CAV11	2740	3793	E	3273	Yes
Bedroom 2	HEBEL-100-REFL-CAV11	2740	3008	S	1518	Yes
Ensuite	HEBEL-100-REFL-CAV11	2740	1609	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	4001	E	3286	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	54.7	2.00
INT-PB	Internal Plasterboard Stud Wall	49.0	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.8	N/A	1.42	Tile
Bedroom 1	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.8	N/A	1.42	Carpet
Bedroom 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	11.4	N/A	1.42	Carpet
Ensuite	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	42.4	N/A	1.42	Tile
Pantry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.2	N/A	1.42	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom 1	2	Downlight	100	Sealed
Bedroom 2	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

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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-JNOEX2-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G.19, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	43.9	Suburban
Unconditioned*	7.0	<b>NatHERS climate zone</b>
<b>Total</b>	<b>50.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

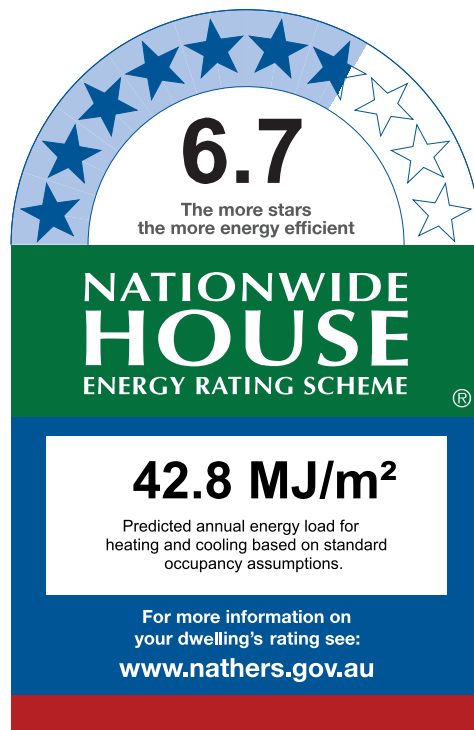
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>14.0</b>	<b>28.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-JNOEX2-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed 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	1168	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	2385	Sliding	45	N	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	ALM-002-01 A	W03	2700	2305	Sliding	45	E	None
Kitchen/Living	ALM-002-01 A	W04	600	1070	Awning	90	W	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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 <sup>2</sup> )	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-CAV11	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-CAV11	2740	3205	W	4380	Yes
Bathroom	HEBEL-100-REFL-CAV11	2740	63	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV11	2740	3112	N	2912	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	3620	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	2709	E	3362	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	85	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	254	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	6219	W	4389	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	34.0	2.00
INT-PB	Internal Plasterboard Stud Wall	31.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.8	N/A	1.42	Carpet
Entry	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.2	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	23.1	N/A	1.42	Tile
Study	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.8	N/A	1.42	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Entry	1	Downlight	100	Sealed
Kitchen/Living	3	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* 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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<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits 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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<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-MVSU5Z-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G.20, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	48.3	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	<b>52.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

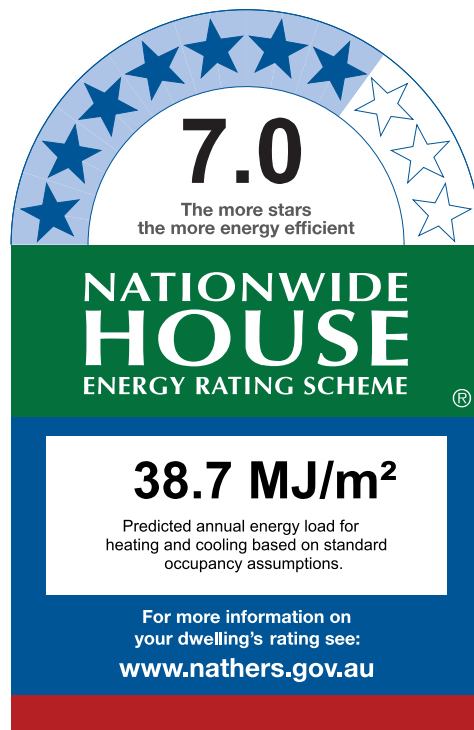
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

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### Thermal Performance

Heating	Cooling
<b>14.6</b>	<b>24.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

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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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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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	ALM-002-01 A	W01	2700	1121	Sliding	45	N	None
Kitchen/Living	ALM-002-01 A	W02	2700	2415	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	3669	Sliding	66	E	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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-CAV11	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	HEBEL-100-REFL-CAV11	2740	2307	N	4382	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	3599	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	5377	E	6445	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	4953	W	7083	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	49.8	2.00
INT-PB	Internal Plasterboard Stud Wall	22.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	1.42	Tile
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.5	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.8	N/A	1.42	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	200	Sealed
Bedroom	2	Downlight	100	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
None			

## Explanatory Notes

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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-UNFNUH-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G.21, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	49.4	Suburban
Unconditioned*	4.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>54.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

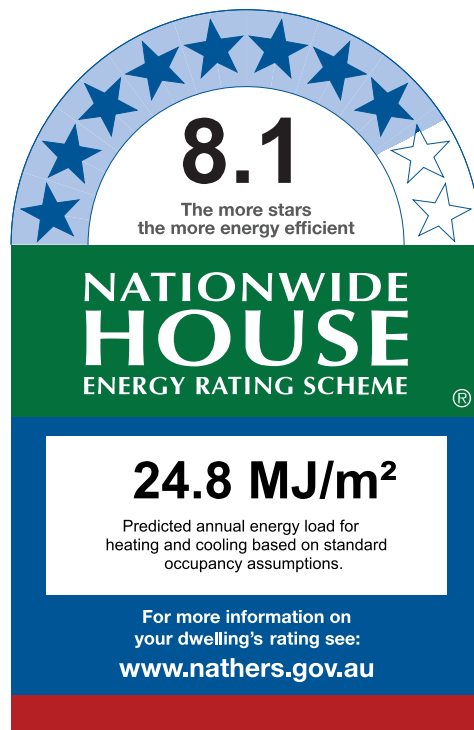
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>12.8</b>	<b>11.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-UNFNUH-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-002-01 A	Aluminium B SG Clear	6.70	0.70	0.66	0.73

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper 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	1154	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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-CAV11	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-CAV11	2740	1778	W	10224	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-CAV11	2740	3832	N	2349	Yes
Kitchen/Living	HEBEL-100-REFL-CAV11	2740	2033	W	5772	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV11	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	75.8	2.00
INT-PB	Internal Plasterboard Stud Wall	18.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.8	N/A	1.42	Tile
Bedroom	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.1	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	37.3	N/A	1.42	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Exhaust Fan	350	Sealed
Bathroom	1	Downlight	100	Sealed
Bedroom	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
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\* 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-9SCEOS-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G01, 4 Delmar Parade, DEE WHY, NSW, 2099  
**Lot/DP** 13a/342819  
**NCC Class\*** 2  
**Type** New

### Plans

**Main Plan** Project No. 221054  
**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure Type	
Conditioned*	47.7	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	52.7	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

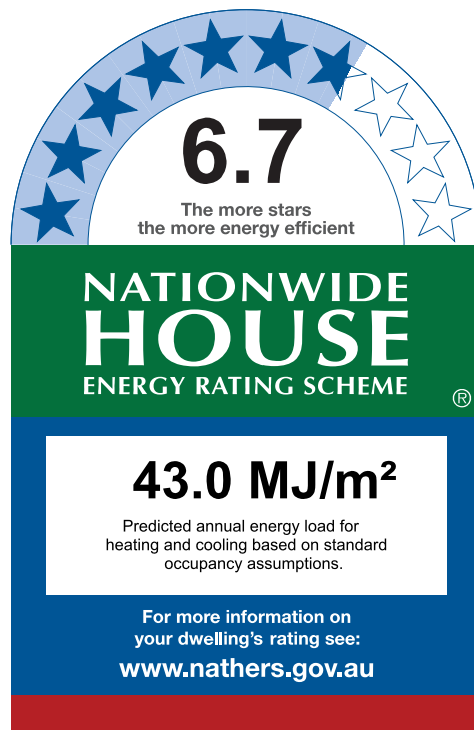
**Name** Duncan Hope  
**Business name** Senica Consultancy Group  
**Email** duncan@senica.com.au  
**Phone** +61 280067784  
**Accreditation No.** DMN/14/1658  
**Assessor Accrediting Organisation** DMN  
**Declaration of interest** No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 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
<b>28.4</b>	<b>14.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01	2700	2461	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03	2700	2243	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	STG-005-02 A	W02	2700	1112	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3012	W	2265	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	421	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3139	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3585	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	166	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	143	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	65.1	2.00
INT-PB	Internal Plasterboard Stud Wall	21.2	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	5.1	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	36.5	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	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

### Ceiling fans

Location	Quantity	Diameter (mm)
None		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

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<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-5S88WD-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G02, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	91.9	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>95.7</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>34.8</b>	<b>17.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-5S88WD-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W05	2700	1169	Awning	60	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 01	STG-005-02 A	W01	2700	2371	Sliding	45	E	None
Bedroom 02	STG-002-01 A	W02	2700	1200	Awning	60	E	None
Kitchen/Living	STG-005-02 A	W04	2700	2479	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W03	2700	3412	Sliding	45	N	None
Kitchen/Living	STG-002-01 A	W06	600	900	Awning	90	S	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.

## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3086	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2952	E	5485	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1802	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4008	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5507	N	5039	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4880	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	79.4	2.00
INT-PB	Internal Plasterboard Stud Wall	60.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	3.8	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	21.3	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	11.9	N/A	1.42	Carpet
Ensuite	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	3.8	N/A	1.42	Tile
Hallway	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	3.2	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	35.1	N/A	1.42	Tile
Study/Entry	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	16.4	N/A	1.42	Tile

\* Refer to glossary.



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Study/Entry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	1	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/Entry	2	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	2.68	0.50	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-QPZZE4-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G03, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	58.3	Suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>63.8</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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**5.7**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**55.5 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>32.8</b>	<b>22.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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\* Refer to glossary.



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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 this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02	2700	2700	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W01	2700	2781	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3996	E	2297	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	3976	E	2296	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	65.0	2.00
INT-PB	Internal Plasterboard Stud Wall	37.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	5.5	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	11.9	N/A	1.42	Carpet
Kitchen/Living	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	32.0	N/A	1.42	Tile
Study	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	14.4	N/A	1.42	Carpet

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	2	Downlight	100	Sealed

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

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## Explanatory Notes

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	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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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-TX7X0D-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G04, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	102.6	Suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
<b>Total</b>	<b>108.1</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**33.3 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>23.6</b>	<b>9.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-TX7X0D-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01	2700	2300	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W06	600	1200	Awning	90	S	None
Bedroom 02	STG-005-02 A	W02	2700	1191	Sliding	45	E	None
Bedroom 03	STG-005-02 A	W05	2700	1142	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W04	2700	2401	Sliding	45	E	None
Kitchen/Living	STG-005-02 A	W03	2700	3163	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 <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

\* Refer to glossary.



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2973	E	2927	No
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3257	S	2561	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2445	N		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2189	E	6285	No
Bedroom 03	HEBEL-100-REFL-CAV1	2740	3018	E	5897	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1121	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4007	E	5633	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	5849	N	5160	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	260	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	83.9	2.00
INT-PB	Internal Plasterboard Stud Wall	84.5	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.5	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	18.4	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	10.7	N/A	1.42	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.8	N/A	0.00	Carpet
Day Time 35	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.2	N/A	0.00	Tile

\* Refer to glossary.



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	5.3	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	45.3	N/A	1.42	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.9	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Day Time 35	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Day Time 35	1	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

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

\* Refer to glossary.



## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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## NatHERS Certificate No. #HR-K9BD7P-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

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**Lot/DP**

**NCC Class\*** 2

**Type** New

### Plans

**Main Plan** Project No. 221054

**Prepared by** Rothe Lowman

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure Type
Conditioned*	80.3	Suburban
Unconditioned*	7.2	<b>NatHERS climate zone</b>
Total	87.5	56 - Mascot AMO
Garage	0.0	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**25.7 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>2.4</b>	<b>23.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-K9BD7P-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W01	2700	839	Sliding	45	E	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-002-01 A	W04	1800	1060	Awning	90	W	None
Kitchen/living	STG-005-02 A	W02	2700	2390	Sliding	45	E	None
Kitchen/living	STG-002-01 A	W03	1800	2400	Awning	30	N	None

## Roof window *type and performance value*

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

## Skylight *type and performance*

Skylight ID	Skylight description
None	

## Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1637	E	5908	No
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1573	W		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	4078	E		Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	2810	S	6190	Yes
Kitchen/living	HEBEL-100-REFL-CAV1	2740	5418	N		No

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	86.0	2.00
INT-PB	Internal Plasterboard Stud Wall	67.9	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	7.2	N/A	1.42	Tile
Bedroom 01	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	11.2	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.1	N/A	0.00	Tile
Ensuite	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	4.8	N/A	1.42	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.5	N/A	0.00	Tile
Kitchen/living	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	33.9	N/A	1.42	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	5.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.3	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	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
Entry	1	Downlight	100	Sealed
Kitchen/living	4	Downlight	100	Sealed
Kitchen/living	1	Exhaust Fan	350	Sealed
Laundry	1	Downlight	100	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			



## 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-VXT4WQ-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

## Property

**Address** G06, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	45.7	Suburban
Unconditioned*	3.8	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.6</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



## Accredited assessor

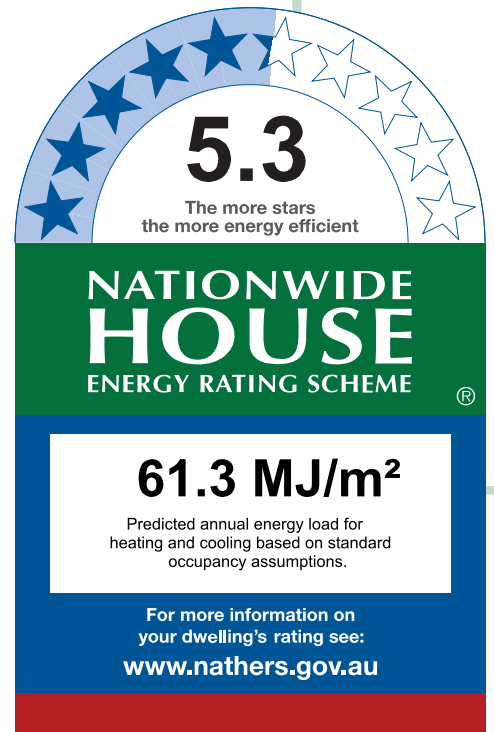
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

## National Construction Code (NCC) requirements

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## Thermal Performance

Heating	Cooling
<b>44.6</b>	<b>16.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

## 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

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Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.40	0.49	0.47	0.51
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.40	0.58	0.55	0.61

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
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-002-03 A	W03	2700	2136	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*
Bedroom 02	ALM-001-03 A	W02	600	1200	Awning	90	S	None
Kitchen/Living	ALM-002-03 A	W01	2700	2808	Sliding	45	W	None
Study	ALM-002-03 A	W04	2700	778	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 <sup>2</sup> )	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*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3008	W	2314	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3727	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	2969	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4426	W	2314	Yes
Study	HEBEL-100-REFL-CAV1	2740	1891	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	42.1	2.00
INT-PB	Internal Plasterboard Stud Wall	28.7	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	3.8	N/A	1.42	Tile
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	28.5	N/A	1.42	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	6.0	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 02	2	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 absorbance	Roof Colour
None			

\* Refer to glossary.



## Explanatory Notes

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## Glossary

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<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-10HD50-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G07, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	93.2	Suburban
Unconditioned*	4.6	<b>NatHERS climate zone</b>
<b>Total</b>	<b>97.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**44.6 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>33.5</b>	<b>11.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-10HD50-01>. 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02	600	1200	Awning	90	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 01	STG-005-02 A	W01	2700	2231	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04	2700	2212	Sliding	45	W	None
Bedroom 03	STG-005-02 A	W05	2700	995	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03	2700	2992	Sliding	45	W	None
Study	STG-002-01 A	W06	600	1200	Awning	90	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	6269	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3262	W	1983	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3620	W	2205	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2962	S	1298	Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1391	W	5314	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4034	W	1564	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	418	N	3321	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	641	S	4980	Yes
Study	HEBEL-100-REFL-CAV1	2740	2181	N		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	48.8	2.00
INT-PB	Internal Plasterboard Stud Wall	80.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.6	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	14.9	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.7	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.1	N/A	0.00	Carpet
Ensuite	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	4.9	N/A	1.42	Tile

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Hallway	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	3.8	N/A	1.42	Tile
Kitchen/Living	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	38.4	N/A	1.42	Tile
Study	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	7.4	N/A	1.42	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Bedroom 03	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Ensuite	1	Exhaust Fan	350	Sealed
Hallway	1	Downlight	100	Sealed
Kitchen/Living	6	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed
Study	1	Downlight	100	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. 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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<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-ML7PRN-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G08, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	68.8	Suburban
Unconditioned*	5.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>73.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

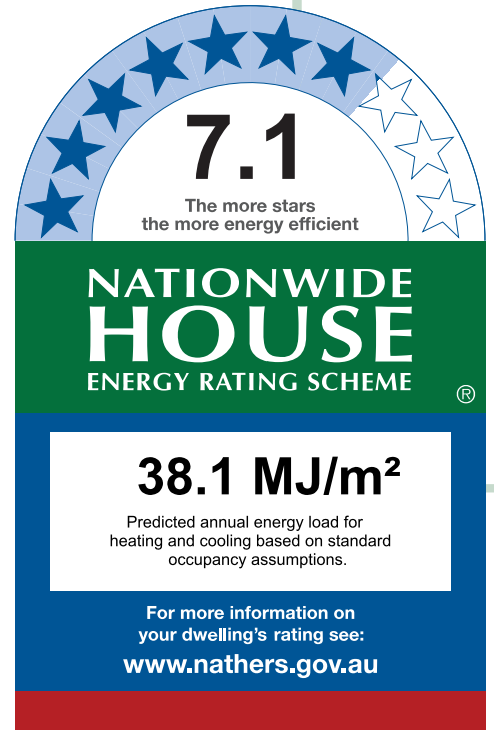
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>19.5</b>	<b>18.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-ML7PRN-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W03	2700	2026	Sliding	45	W	None

\* Refer to glossary.



## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Bedroom 02	STG-005-02 A	W02	2700	2190	Sliding	45	W	None
Bedroom 02	STG-002-01 A	W01	600	1200	Awning	90	S	None
Kitchen/Living	STG-005-02 A	W05	2700	3000	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	2773	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2968	W	3707	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3009	W	2263	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3757	S		Yes
Ensuite	HEBEL-100-REFL-CAV1	2740	1588	S		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1490	N	2935	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3987	W	2217	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	46.6	2.00
INT-PB	Internal Plasterboard Stud Wall	44.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	5.1	N/A	1.42	Carpet
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.2	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.7	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	41.5	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
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\* Refer to glossary.



## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bathroom	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Ensuite	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	1	Downlight	100	Sealed
Kitchen/Living	5	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	2.68	0.50	Medium

\* Refer to glossary.



## Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
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<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-T20P2W-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G09, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	96.7	Suburban
Unconditioned*	4.7	<b>NatHERS climate zone</b>
<b>Total</b>	<b>101.4</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

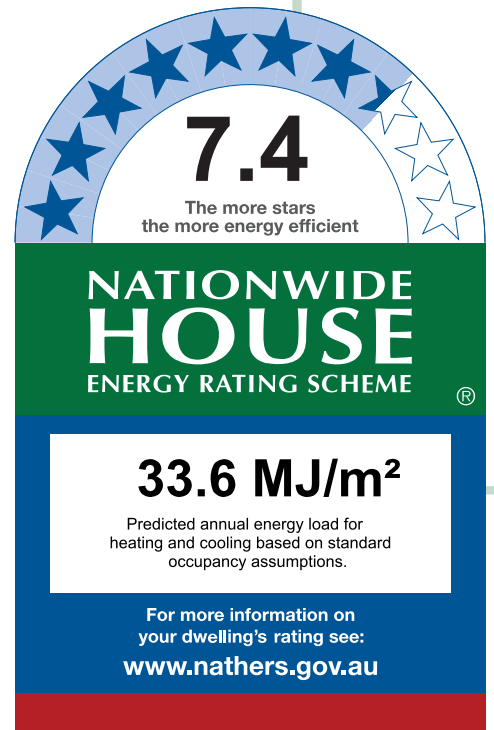
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>20.9</b>	<b>12.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-T20P2W-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-001-01 A	Aluminium A SG Clear	6.70	0.57	0.54	0.60

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02	2700	995	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W03	2700	1109	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*
Bedroom 03	ALM-001-01 A	W01	2700	1193	Casement	90	E	None
Kitchen/Living	STG-005-02 A	W01	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)	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes



## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2936	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	1627	W		Yes
Bedroom 03	HEBEL-100-REFL-CAV1	2740	1644	E	4789	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	4001	E	2813	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1994	S	1869	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	18.1	2.50
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	67.8	2.00
INT-PB	Internal Plasterboard Stud Wall	84.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.7	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-500-LINED: Suspended Concrete Slab Floor (500mm) - Lined Below	12.2	N/A	1.42	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.3	N/A	0.00	Carpet
Bedroom 03	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	14.7	N/A	0.00	Carpet
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.9	N/A	0.00	Tile
Entry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	7.8	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	34.4	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.3	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	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
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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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-2QGD0P-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G10, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	48.9	Suburban
Unconditioned*	4.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>52.9</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

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**6.6**  
The more stars  
the more energy efficient

**NATIONWIDE  
HOUSE**  
ENERGY RATING SCHEME

**44.2 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>18.9</b>	<b>25.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02	2700	2665	Sliding	45	E	None
Kitchen?living	STG-005-02 A	W04	2700	2643	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2946	E	3059	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	4490	N		Yes
Kitchen?living	HEBEL-100-REFL-CAV1	2740	3848	E	3054	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	38.7	2.50
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	19.8	2.00
INT-PB	Internal Plasterboard Stud Wall	19.4	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	13.3	N/A	0.00	Tile
Kitchen?living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.6	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
None			

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen?living	5	Downlight	100	Sealed
Kitchen?living	1	Exhaust Fan	350	Sealed

\* Refer to glossary.



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
None			

\* Refer to glossary.





## Explanatory Notes

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer 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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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-H0W4VG-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G11, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	60.8	Suburban
Unconditioned*	4.3	<b>NatHERS climate zone</b>
<b>Total</b>	65.1	56 - Mascot AMO
<b>Garage</b>	0.0	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**38.2 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>17.1</b>	<b>21.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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### Verification

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## Certificate Check

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

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Does the ‘number’ and ‘type’ of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the ‘External Door Schedule’ show apartment entrance doors? Please note that an “external door” between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is “exposed” or a top floor high-rise apartment is “protected”.

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in “additional notes” below?

## Window and 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

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	ALM-001-01 A	W03	2700	1800	Casement	45	E	None
Bedroom 01	ALM-001-01 A	W02	2700	900	Casement	90	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Shading device*
Kitchen/Living	ALM-001-01 A	W01	2700	2490	Casement	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	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 Panel (100mm) Clad (Ref. Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bathroom	HEBEL-100-REFL-CAV1	2740	1609	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3535	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	4255	S		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1672	N	3626	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3599	E		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	995	S		Yes
Study	HEBEL-100-REFL-CAV1	2740	2900	S		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	42.8	2.50
INT-PB	Internal Plasterboard Stud Wall	38.6	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.3	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	15.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	35.2	N/A	0.00	Tile
Study	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	10.5	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Study	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	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	2.68	0.50	Medium

\* Refer to glossary.

## Explanatory Notes

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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-YMNNFM-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G12, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	52.5	Suburban
Unconditioned*	4.0	<b>NatHERS climate zone</b>
<b>Total</b>	<b>56.5</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://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

**35.5 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>18.5</b>	<b>17.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-YMNNFM-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W02	2700	2100	Sliding	45	W	None
Kitchen/Living 14	STG-005-02 A	W01	2700	2400	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door schedule

Location	Height (mm)	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3408	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	3006	W		Yes
Kitchen/Living 14	HEBEL-100-REFL-CAV1	2740	3535	W		Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	56.1	2.50
INT-PB	Internal Plasterboard Stud Wall	38.1	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.0	N/A	0.00	Carpet
Hallway	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	3.3	N/A	0.00	Tile
Kitchen/Living 14	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	32.8	N/A	0.00	Tile
Laundry	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.4	N/A	0.00	Tile

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bedroom 01	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Hallway	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Kitchen/Living 14	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No
Laundry	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bathroom	1	Downlight	100	Sealed
Bedroom 01	2	Downlight	100	Sealed

\* Refer to glossary.



## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Kitchen/Living 14	5	Downlight	100	Sealed
Kitchen/Living 14	1	Exhaust Fan	350	Sealed
Laundry	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	2.68	0.50	Medium



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) 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

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	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.
<b>Ceiling penetrations</b>	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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular 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-N1W69I-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G13, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	68.2	Suburban
Unconditioned*	4.0	<b>NatHERS climate zone</b>
<b>Total</b>	<b>72.2</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

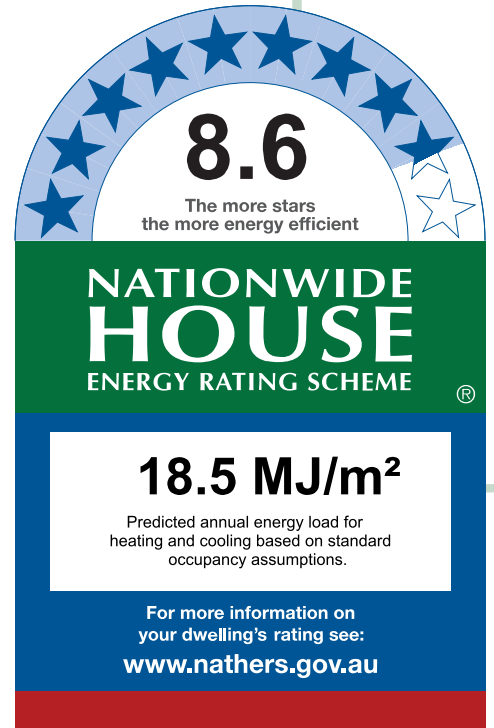
<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal Performance

Heating	Cooling
<b>7.8</b>	<b>10.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-N1W69I-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door type and performance

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-002-01 A	W02	1800	1015	Awning	90	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 01	STG-005-02 A	W01	2700	1945	Sliding	45	W	None
Bedroom 02	STG-005-02 A	W04	2700	1760	Sliding	45	W	None
Kitchen/Living	STG-005-02 A	W03	2700	2807	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 <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
None				

## External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*

\* 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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3133	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1313	E		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1736	N		Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	1693	E	3117	Yes
Bedroom 01	HEBEL-100-REFL-CAV1	2740	3006	W	3879	Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	2988	W		Yes
Bedroom 02	HEBEL-100-REFL-CAV1	2740	3413	S	13260	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3959	W		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3827	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	658	E	3081	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	13.6	2.50
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	16.9	2.00
INT-PB	Internal Plasterboard Stud Wall	46.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	12.4	N/A	0.00	Carpet
Bedroom 02	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.0	N/A	0.00	Tile
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	40.9	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	2	Downlight	100	Sealed
Bedroom 02	2	Downlight	100	Sealed
Ensuite	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			



## 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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\* Refer to glossary.

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. #HR-WB7XNP-01

Generated on 21 Sep 2023 using Hero 3.1.0.6

### Property

**Address** G14, 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 <sup>2</sup> )*		Exposure Type
Conditioned*	44.9	Suburban
Unconditioned*	4.1	<b>NatHERS climate zone</b>
<b>Total</b>	<b>49.0</b>	<b>56 - Mascot AMO</b>
<b>Garage</b>	<b>0.0</b>	



### Accredited assessor

<b>Name</b>	Duncan Hope
<b>Business name</b>	Senica Consultancy Group
<b>Email</b>	duncan@senica.com.au
<b>Phone</b>	+61 280067784
<b>Accreditation No.</b>	DMN/14/1658
<b>Assessor Accrediting Organisation</b>	DMN
<b>Declaration of interest</b>	No Conflict of Interest

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**8.9**  
The more stars  
the more energy efficient

**NATIONWIDE HOUSE**  
ENERGY RATING SCHEME

**14.8 MJ/m<sup>2</sup>**  
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](http://www.nathers.gov.au)

### Thermal Performance

Heating	Cooling
<b>0.6</b>	<b>14.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-WB7XNP-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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
STG-002-01 A	Aluminium Awning Window SG 3Clr	6.46	0.65	0.62	0.68
STG-005-02 A	Aluminium Sliding Door SG 5Clr	6.25	0.72	0.68	0.76

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bedroom 01	STG-005-02 A	W06	2700	1850	Sliding	45	N	None

\* Refer to glossary.

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Kitchen/Living	STG-002-01 A	W01	1800	1022	Awning	90	N	None
Kitchen/Living	STG-005-02 A	W05	2700	1654	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 <sup>2</sup> )	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 Panel (100mm) Clad (Refl Cavity) Stud Wall	0.30	Light	2.50	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bedroom 01	HEBEL-100-REFL-CAV1	2740	2990	N	2983	Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	3612	N		Yes
Kitchen/Living	HEBEL-100-REFL-CAV1	2740	1910	W	3068	Yes

## Internal wall type

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
HEBEL-100-REFL-CAV1	Hebel Panel (100mm) Clad (Refl Cavity) Stud Wall	32.3	2.50
HEBEL-PARTITION1	Hebel Panel Partition wall with Acoustic Insulation	24.8	2.00
INT-PB	Internal Plasterboard Stud Wall	21.8	0.00

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	4.1	N/A	0.00	Tile
Bedroom 01	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	11.0	N/A	0.00	Carpet
Kitchen/Living	SUSP-CONC-200: Suspended Concrete Slab Floor (200mm)	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	100	Sealed
Bathroom	1	Exhaust Fan	350	Sealed
Bedroom 01	2	Downlight	100	Sealed
Kitchen/Living	4	Downlight	100	Sealed
Kitchen/Living	1	Exhaust Fan	350	Sealed



## Ceiling fans

Location	Quantity	Diameter (mm)
None		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
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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