



ENERGY EFFICIENCY REPORT

BASIX® Thermal Comfort Simulation Assessment

SITE ADDRESS

Lot 5 (#53B) Warriewood Road WARRIEWOOD 2102

LOCAL GOVERNMENT AUTHORITY

Northern Beaches Council

CLIENT

Rise Projects

COMMISSIONED BY

Rise Projects

ASSESSMENT DATE

11/07/2022

DEPOSITED PLAN

1115877

DWELLING TYPE

Double Storey

REFERENCE NUMBER

RP 225_Lot 5

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PROJECT CERTIFICATION SUMMARY

DESIGN AND APPROVED SOFTWARE INFORMATION



SIMULATION ENGINE Chenath Engine v3.21

EXPOSURE Suburban

ORIENTATION: 318

NatHERS CLIMATE ZONE: 56

BCA (NCC) CLIMATE ZONE: 5

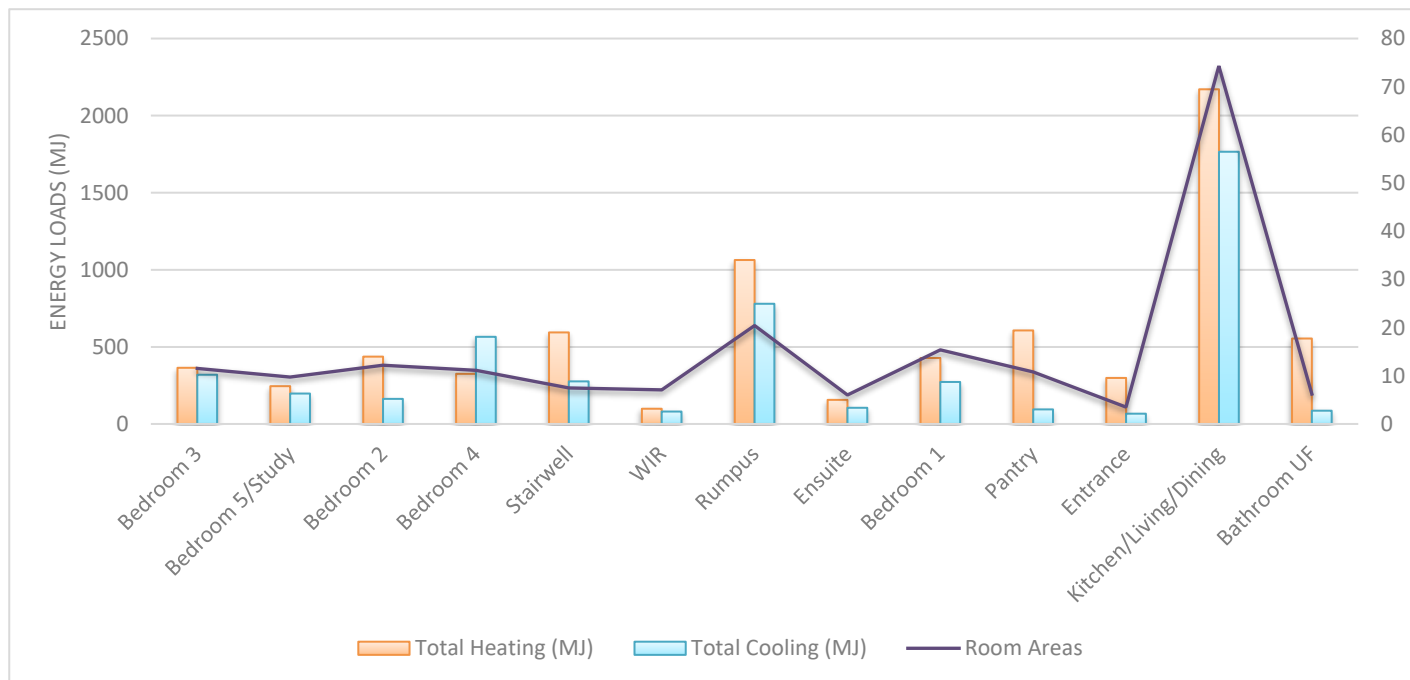
Dwelling Areas (m²)INTERNAL AREAS (m²) 209.00OUTDOOR AREAS (m²) 39.00GARAGE/CARPORT (m²) 30.00**TOTAL: 278.00**

ASSESSMENT CALCULATIONS & SOFTWARE RESULTS

TARGET	(MJ/m ² .pa)	PROPOSED	(MJ/m ² .pa)	BUILD EFFICIENCY BENCHMARK
Heating:	40.0	Heating:	39.3	PASS: 1.8%
Cooling:	26.0	Cooling:	25.5	PASS: 1.9%
Total:	66.0	Total:	64.8	

DWELLING THERMAL PERFORMANCE PER ZONED AREAS

The heating and cooling loads indicated are the simulated annual energy usages (MJ) for this home. The higher the load, the more energy needed to achieve thermal comfort.



STATEMENT OF COMPLIANCE

I / We certify that we are specialists in the relevant discipline and the following design documents comply with the relevant requirements of the National Construction Code (NCC Volume One/Two as applicable) in relation to thermal performance and the relevant Australian Standards specified in this report.

ASSESSOR NAME:

C. Sookloll

SIGNATURE:

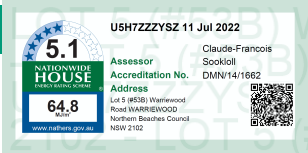
RELEVANT QUALIFICATION STATEMENT

Certificate IV in NatHERS Assessment (Credential Number: TRF0002560)

Residential Building Thermal Performance Assessment (91318NSW) Course

Assessor Accrediting Organisation (AAO) Accreditation Number: **VIC/BDAY/14/1662 | ABSA/61846**

BUILDING SPECIFICATION SUMMARY



EXTERNAL WALLS

	CONSTRUCTION TYPE	INSULATION	NOTES
EXTERNAL WALLS	Brick Masonry	None	To the Front Elevation Garage wall (as per drawings)
	Brick Veneer	R2.5 Batts	Specified external walls (as per drawings)
	Framed	R2.5 Batts	Throughout remainder of the external walls (as per drawings)

ADDITIONAL NOTES Location of Construction Materials as per drawings

INTERNAL WALLS

	CONSTRUCTION TYPE	INSULATION	NOTES
INTERNAL WALLS	Framed	R2.0 Batts	To the Garage, Bathroom (GF) & Laundry internal walls only
	Framed	None	Throughout the remaining internal walls

ADDITIONAL NOTES None

ROOF AND CEILING

	CONSTRUCTION TYPE	INSULATION	NOTES
ROOF	Colorbond (un-ventilated)	R1.3 Roof Blanket	Approx. 15° Roof Pitch (location as per drawings)
CEILING	Plasterboard	R6.0 Insulation	House and Garage Ceiling Area

ADDITIONAL NOTES Location of ceiling insulation as per drawings

FLOOR

	CONSTRUCTION TYPE	INSULATION	NOTES
FLOOR	225mm Waffle 85mm Slab	Integrated	Throughout the Ground Floor
	Timber Suspended	R4.0 Batts	Throughout the Upper Floor

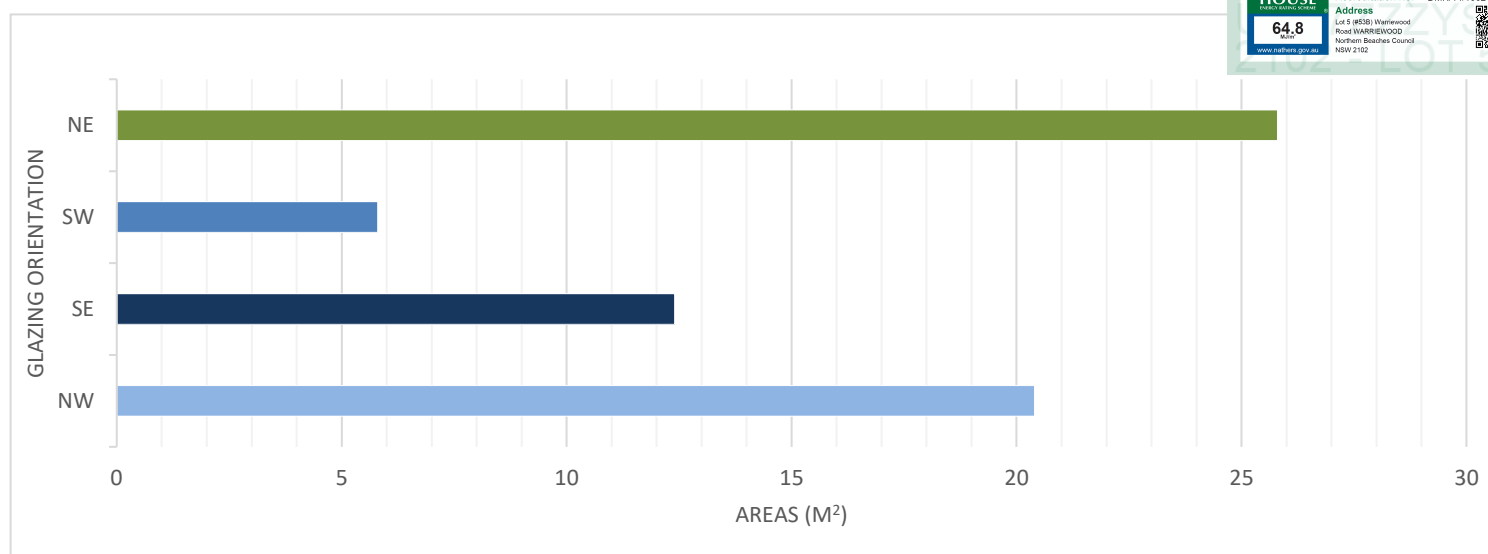
ADDITIONAL NOTES Floor Coverings modelled as per Drawings & NatHERS Protocols

GLASS TYPE	COLOUR	FRAME	U _w VALUE	SHGC	NOTES
Standard	Clear	Aluminium	6.38	0.75	Casement Windows
Standard	Clear	Aluminium	6.38	0.75	Sliding Windows
Standard	Clear	Aluminium	6.36	0.65	Awning Windows
Standard	Clear	Aluminium	6.16	0.71	Sliding Doors
Standard	Clear	Aluminium	6.16	0.75	Fixed Windows

Note: Only a +/-5% SHGC tolerance is allowed with this rating. NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated in the report. If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.



GLAZING AREA DIRECTIONS



The chart above indicates the direction of all glazed doors and windows on the external envelope of the dwelling. To increase the thermal performance of the dwelling:

1. Maximise unsheltered northern-aspect glazing.
2. Keep west-facing glazing as small as possible: total window area should be less than 5% of the home's total floor area.
3. Keep south-facing glazing reasonably small: total window area should be less than 5% of the home's total floor area. Maximise the openable area if possible.
4. Keep east-facing glazing to a modest size: total window area should be less than 8% of the home's total floor area

Refer to the floor and elevation plans for shading location

LIGHTING/PENETRATION CALCULATIONS

ARTIFICIAL LIGHTING CALCULATION ALLOWANCES

AREA WITHIN THE CLASS 1 BUILDING	209.00 m ²		
Development Total	1045.0 Watts	Area Wattage Allowance	5.0 W/m ²
AREA WITHIN THE CLASS 10 BUILDING	30.00 m ²		
Development Total	90.0 Watts	Area Wattage Allowance	3.0 W/m ²
AREA WITHIN THE OUTDOOR AREAS	39.00 m ²		
Development Total	156.0 Watts	Area Wattage Allowance	4.0 W/m ²

CEILING INSULATION PENETRATION ALLOWANCE

CLASS 1 MAXIMUM PENETRATION ALLOWANCE	CLASS 1 MAXIMUM PENETRATION AREA (m ²)
0.5% TOTAL INSULATED CEILING AREA	1.05

The clearance required around downlights by "Australian Standard AS/NZS 3000 – 2007 Electrical Installations" (AS/NZS 3000), introduces a significant area of uninsulated ceiling and therefore increases heat loss and gain through the ceiling.

If approved fireproof downlight covers, which can be fully covered by insulation, are specified and noted on the electrical plan by the building designer or architect, then there is no need to allow for the ceiling penetration

NSW ADDITIONS: BUILDING FABRIC THERMAL INSULATION

NSW 3.12.1 APPLICATION OF NSW PART 3.12.1

- (a) Compliance with NSW 3.12.1.1 satisfies NSW P2.6.1(a) for thermal insulation and thermal breaks.
- (b) NSW PART 3.12.1 only applies to thermal insulation in a Class 1 or 10 building where a development consent specifies that the insulation is to be provided as part of the development.
- (c) In (b), the term development consent has the meaning given by the Environmental Planning and Assessment Act 1979.
- (d) The Deemed-to-Satisfy Provisions of this Part for thermal breaks apply to all Class 1 buildings and Class 10a buildings with a conditioned space.

NSW 3.12.1.1 COMPLIANCE WITH BCA PROVISIONS

- (a) Thermal insulation in a building must comply with the national BCA provisions of 3.12.1.1.
- (b) A thermal break must be provided between the external cladding and framing in accordance with national BCA provisions of—
 - (i) 3.12.1.2(c) for a metal framed roof; and
 - (ii) 3.12.1.4(b) for a metal framed wall.
- (c) Compensation for reduction in ceiling insulation must comply with the national BCA provisions of 3.12.1.2(e).
- (d) A floor with an in-slab or in-screed heating or cooling system must comply with the national BCA provisions of—
 - (i) 3.12.1.5(a)(ii), (iii) and (e) for a suspended floor; or
 - (ii) 3.12.1.5(c), (d) and (e) for a concrete slab-on-ground.

BUILDING SEALING & SERVICES

NSW 3.12.3 APPLICATION OF NSW PART 3.12.3

- (a) Compliance with NSW 3.12.3.1 satisfies NSW P2.6.1(b) for building sealing.
- (b) NSW Part 3.12.3 is not applicable to—
 - (i) existing buildings being relocated; or
 - (ii) Class 10a buildings—
 - (A) without a conditioned space; or
 - (B) for the accommodation of vehicles; or
 - (iii) parts of buildings that cannot be fully enclosed; or
 - (iv) a permanent building opening, in a space where a gas appliance is located, that is necessary for the safe operation of a gas appliance; or
 - (v) a building in climate zones 2 and 5 where the only means of air-conditioning is by using an evaporative cooler.

NSW 3.12.3.1 COMPLIANCE WITH BCA PROVISIONS

The sealing of a building must comply with the national BCA provisions 3.12.3.1 to 3.12.3.6.

NSW 3.12.5 SERVICES: APPLICATION OF NSW PART 3.12.5

- (a) Compliance with NSW 3.12.5.1 satisfies NSW P2.6.2 for services.
- (b) NSW Part 3.12.5 is not applicable to existing services associated with existing buildings being relocated.

NSW 3.12.5.1 COMPLIANCE WITH BCA PROVISIONS

Services must comply with the national BCA provisions 3.12.5.0 to 3.12.5.3.



Nationwide House Energy Rating Scheme

NatHERS Certificate No. U5H7ZZYSZ

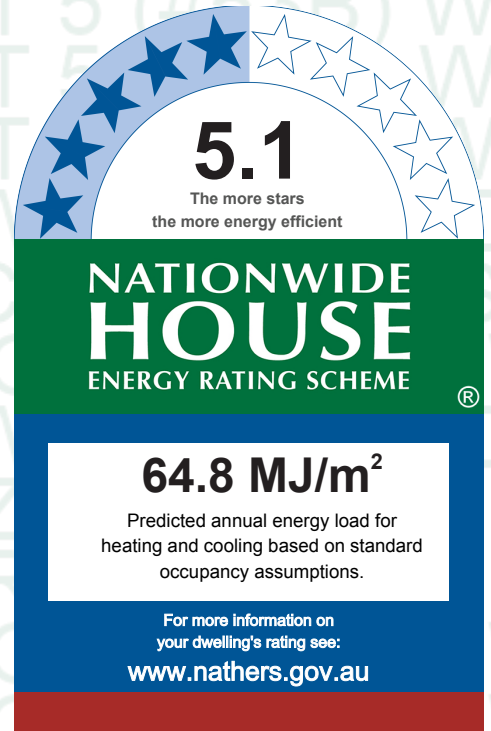
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Property

Address Lot 5 (#53B) Warriewood Road WARRIEWOOD, Northern Beaches Council, NSW, 2102
Lot/DP 5|1115877
NCC Class* Class 1a
Type New Home

Plans

Main plan RP 225_Lot 5 | 11/07/2022
Prepared by Rise Projects



Construction and environment

Assessed floor area (m²)*		Exposure type
Conditioned*	184.5	suburban
Unconditioned*	39	NatHERS climate zone
Total	223.5	56 Mascot AMO
Garage	30	

Thermal performance

Heating	Cooling
39.3	25.5
MJ/m²	MJ/m²

About the rating

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

Verification

To verify this certificate, scan the QR code or visit <https://www.fr5.com.au/QRCodeLanding?PublicId=U5H7ZZYSZ> When using either link, ensure you are visiting www.FR5.com.au.



Accredited assessor

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Email energy@energyadvance.com.au
Phone 1300 850 228
Accreditation No. DMN/14/1662
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

National Construction Code (NCC) requirements

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

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

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

* Refer to glossary.

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Additional Notes

BCA Climate Zone: 5

Perimeter Insulation has not been included in the modelling of this dwelling

Please note, restricted window openings (%) have been modelled as per NCC 2019 requirements

Eaves indicated by the 'Horizontal shading feature* maximum projection (mm)' may not be directly opposing the respective wall (i.e. some eaves may be horizontally offset)

Where applicable, an additional 150mm has been added to the projection of all 'Horizontal shading features & eaves' to account for the Gutter & Fascia Board

Window and glazed door *type and performance*

Default* windows

				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
				No Data Available	

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
DOW-001-01 A	Al Sliding Window SG 3Clr	6.38	0.75	0.71	0.79
DOW-006-01 A	Al Sliding Door SG 5Clr	6.16	0.71	0.67	0.75
DOW-002-01 A	Elite Al Awning Window SG 3Clr	6.36	0.65	0.62	0.68
DOW-014-01 A	Aluminium Fixed Light Window SG 4Clr	6.16	0.75	0.71	0.79

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 5/Study	DOW-001-01 A	W26	1457	1000	sliding	45.0	NE	No
Bedroom 5/Study	DOW-001-01 A	W25	1457	1800	sliding	45.0	N	No
Bedroom 5/Study	DOW-006-01 A	D5	2400	1780	sliding	45.0	NW	No
Kitchen/Living/-Dining	DOW-001-01 A	W2	600	1000	sliding	45.0	NE	No
Kitchen/Living/-Dining	DOW-001-01 A	W3	600	1000	sliding	45.0	NE	No
Kitchen/Living/-Dining	DOW-006-01 A	D1	2400	2800	other	60.0	N	No
Kitchen/Living/-Dining	DOW-006-01 A	D2	2400	2800	other	60.0	NW	No
Kitchen/Living/-Dining	DOW-006-01 A	D8	2400	3150	other	60.0	NE	No
Kitchen/Living/-Dining	DOW-002-01 A	W19	1400	1400	awning	90.0	NW	No
Kitchen/Living/-Dining	DOW-001-01 A	W1	1400	3000	casement	90.0	SE	No
Bathroom GF	DOW-001-01 A	GF Bathroom	600	1400	sliding	45.0	SW	No
Bedroom 2	DOW-001-01 A	W10	1457	1500	sliding	30.0	NW	No
Bedroom 2	DOW-001-01 A	W8	1457	1810	casement	10.0	SE	No
Bedroom 2	DOW-001-01 A	W9	500	1810	sliding	45.0	NE	No
Bedroom 4	DOW-014-01 A	W7	1400	2100	fixed	0.0	SE	No
Bedroom 3	DOW-014-01 A	W23	1457	1810	fixed	0.0	SE	No
Bedroom 3	DOW-001-01 A	W17	500	1810	sliding	45.0	SW	No
Bedroom 1	DOW-001-01 A	W13	500	1810	sliding	45.0	SW	No
Bedroom 1	DOW-001-01 A	W12	1457	2700	sliding	30.0	N	No
Bedroom 1	DOW-001-01 A	W13	1457	1810	sliding	10.0	NW	No
Stairwell	DOW-001-01 A	W16	1250	1810	sliding	10.0	SW	No
Rumpus	DOW-014-01 A	W21	1457	1000	fixed	0.0	N	No
Rumpus	DOW-001-01 A	W20	1457	1800	sliding	30.0	NW	No
Ensuite	DOW-001-01 A	W14	500	1810	sliding	45.0	SW	No

Roof window *type and performance value*

Default* roof windows

				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

Substitution tolerance ranges

* Refer to glossary.

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m ²)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2200	4500	100.0	SE
Entrance	2340	920	100.0	SE
Pantry	2340	820	100.0	NW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	STANDARD - Double Brick	0.5	Medium		No
2	STANDARD - Brick Veneer - R2.5 Batts	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No
3	STANDARD - Framed Slim (Generic) - R2.5 Batts	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No
4	STANDARD - Framed Thick (Render) - R2.5 Batts	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No
5	STANDARD - Framed Thick (Generic) - R2.5 Batts	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No
6	STANDARD - Framed Slim (Render) - R2.5 Batts	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	1	2700	5452	SE	1100	No
Garage	2	2700	1388	NE	1415	Yes
Garage	3	2700	5498	SW	0	Yes
Bedroom 5/Study	3	2700	3174	SW	591	Yes
Bedroom 5/Study	3	2700	1481	NE	7782	Yes
Bedroom 5/Study	3	2700	2046	N	120	Yes
Bedroom 5/Study	3	2700	2226	NW	875	Yes



Entrance	4	2700	1668	SE	3340	Yes
Kitchen/Living/Dining	3	2700	4584	NE	0	Yes
Kitchen/Living/Dining	3	2700	3333	N	1003	Yes
Kitchen/Living/Dining	3	2700	3340	NW	12945	Yes
Kitchen/Living/Dining	3	2700	4952	NE	5206	Yes
Kitchen/Living/Dining	3	2700	1787	N	1004	Yes
Kitchen/Living/Dining	3	2700	1608	NW	6520	Yes
Kitchen/Living/Dining	3	2700	2357	NE	7822	Yes
Kitchen/Living/Dining	5	2700	2048	SW	1415	Yes
Kitchen/Living/Dining	5	2700	4800	SE	1290	No
Laundry	3	2700	2188	SW	0	Yes
Pantry	3	2700	999	NW	0	Yes
Pantry	3	2700	4720	SW	0	Yes
Bathroom GF	3	2700	2738	SW	591	Yes
Bedroom 2	3	2700	2117	NW	11861	Yes
Bedroom 2	3	2700	3179	SE	591	Yes
Bedroom 2	3	2700	2997	NE	721	No
Bedroom 4	3	2700	1752	SW	591	Yes
Bedroom 4	3	2700	3674	SE	443	No
Bedroom 4	3	2700	1710	NE	591	Yes
Bedroom 3	3	2700	3183	SE	591	Yes
Bedroom 3	3	2700	148	NE	0	Yes
Bedroom 3	3	2700	110	SE	0	Yes
Bedroom 3	3	2700	758	NW	11862	Yes
Bedroom 3	3	2700	3001	SW	721	No
Bedroom 1	3	2700	2997	SW	717	No
Bedroom 1	3	2700	1294	NE	5505	Yes
Bedroom 1	3	2700	4846	N	600	No
Bedroom 1	3	2700	2815	NW	722	No
WIR	3	2700	1594	SW	739	No
Stairwell	6	2700	2298	SW	1479	Yes
Rumpus	3	2700	3107	NE	2836	Yes
Rumpus	3	2700	1207	N	600	No
Rumpus	3	2700	1964	NW	7655	Yes
Rumpus	3	2700	1503	NE	5475	Yes
Ensuite	3	2700	3801	SW	717	No
Ensuite	3	2700	762	SE	6111	Yes

Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
1	STANDARD - Internal Stud Walls -R2.0 Batts	52.9	Glass fibre batt: R2.0 (R2.0)
2	STANDARD - Internal Stud Walls	130.4	

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Garage	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	13.9	Enclosed	R0.0	none
Garage	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	16.1	Enclosed	R0.0	none
Bedroom 5/Study	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	3.3	Enclosed	R0.0	Timber
Bedroom 5/Study	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	6.4	Enclosed	R0.0	Timber
Entrance	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	3.5	Enclosed	R0.0	Timber
Kitchen/Living/Dining	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	1	Enclosed	R0.0	Timber
Kitchen/Living/Dining	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	13.2	Enclosed	R0.0	Timber
Kitchen/Living/Dining	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	60.1	Enclosed	R0.0	Timber
Laundry	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	4.6	Enclosed	R0.0	Tiles
Pantry	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	6.6	Enclosed	R0.0	Timber
Pantry	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	4.2	Enclosed	R0.0	Timber
Bathroom GF	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	1.1	Enclosed	R0.0	Tiles
Bathroom GF	FR5 - 225mm waffle pod, 85mm concrete (R0.60)	3.4	Enclosed	R0.0	Tiles
Bedroom 2	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	12.2	Enclosed	R4.0	Carpet
Bedroom 4	FLOOR - Framed External Suspended Floor (R4.0 Insulation)	0.6	Elevated	R4.0	Carpet
Bedroom 4	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	10.6	Enclosed	R4.0	Carpet
Bedroom 3	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	11.5	Enclosed	R4.0	Carpet
Bedroom 1	FLOOR - Framed External Suspended Floor (R4.0 Insulation)	3.5	Elevated	R4.0	Carpet
Bedroom 1	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	2.9	Enclosed	R4.0	Carpet
Bedroom 1	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	9.1	Enclosed	R4.0	Carpet
WIR	FLOOR - Framed External Suspended Floor (R4.0 Insulation)	0.1	Elevated	R4.0	Carpet
WIR	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	7	Enclosed	R4.0	Carpet
Stairwell	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	7.5	Enclosed	R4.0	Carpet
Rumpus	FLOOR - Framed External Suspended Floor (R4.0 Insulation)	6.9	Elevated	R4.0	Timber
Rumpus	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	13.5	Enclosed	R4.0	Timber
Ensuite	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	6	Enclosed	R4.0	Tiles

Bathroom UF	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	6.2	Enclosed	R4.0	Tiles
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Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Garage	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	R4.0	No
Garage	Plasterboard	R6.0	Yes
Bedroom 5/Study	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	R4.0	No
Bedroom 5/Study	Plasterboard	R6.0	Yes
Entrance	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	R4.0	No
Kitchen/Living/Dining	Plasterboard	R6.0	Yes
Kitchen/Living/Dining	Plasterboard	R6.0	Yes
Kitchen/Living/Dining	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	R4.0	No
Laundry	Plasterboard	R6.0	Yes
Pantry	Plasterboard	R6.0	Yes
Pantry	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	R4.0	No
Bathroom GF	Plasterboard	R6.0	Yes
Bathroom GF	FLOOR - Framed Internal Suspended Floor (R4.0 Insulation)	R4.0	No
Bedroom 2	Plasterboard	R6.0	Yes
Bedroom 4	Plasterboard	R6.0	Yes
Bedroom 4	Plasterboard	R6.0	Yes
Bedroom 3	Plasterboard	R6.0	Yes
Bedroom 1	Plasterboard	R6.0	Yes
Bedroom 1	Plasterboard	R6.0	Yes
Bedroom 1	Plasterboard	R6.0	Yes
WIR	Plasterboard	R6.0	Yes
Stairwell	Plasterboard	R6.0	Yes
Rumpus	Plasterboard	R6.0	Yes
Rumpus	Plasterboard	R6.0	Yes
Ensuite	Plasterboard	R6.0	Yes
Bathroom UF	Plasterboard	R6.0	Yes

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living/Dining	1	Exhaust Fans	185	Sealed
Laundry	1	Exhaust Fans	250	Sealed



Bathroom GF	1	Exhaust Fans	250	Sealed
Ensuite	1	Exhaust Fans	250	Sealed
Bathroom UF	1	Exhaust Fans	250	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Cont:Attic-Continuous	1.3	0.32	Light

Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

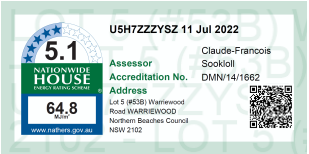
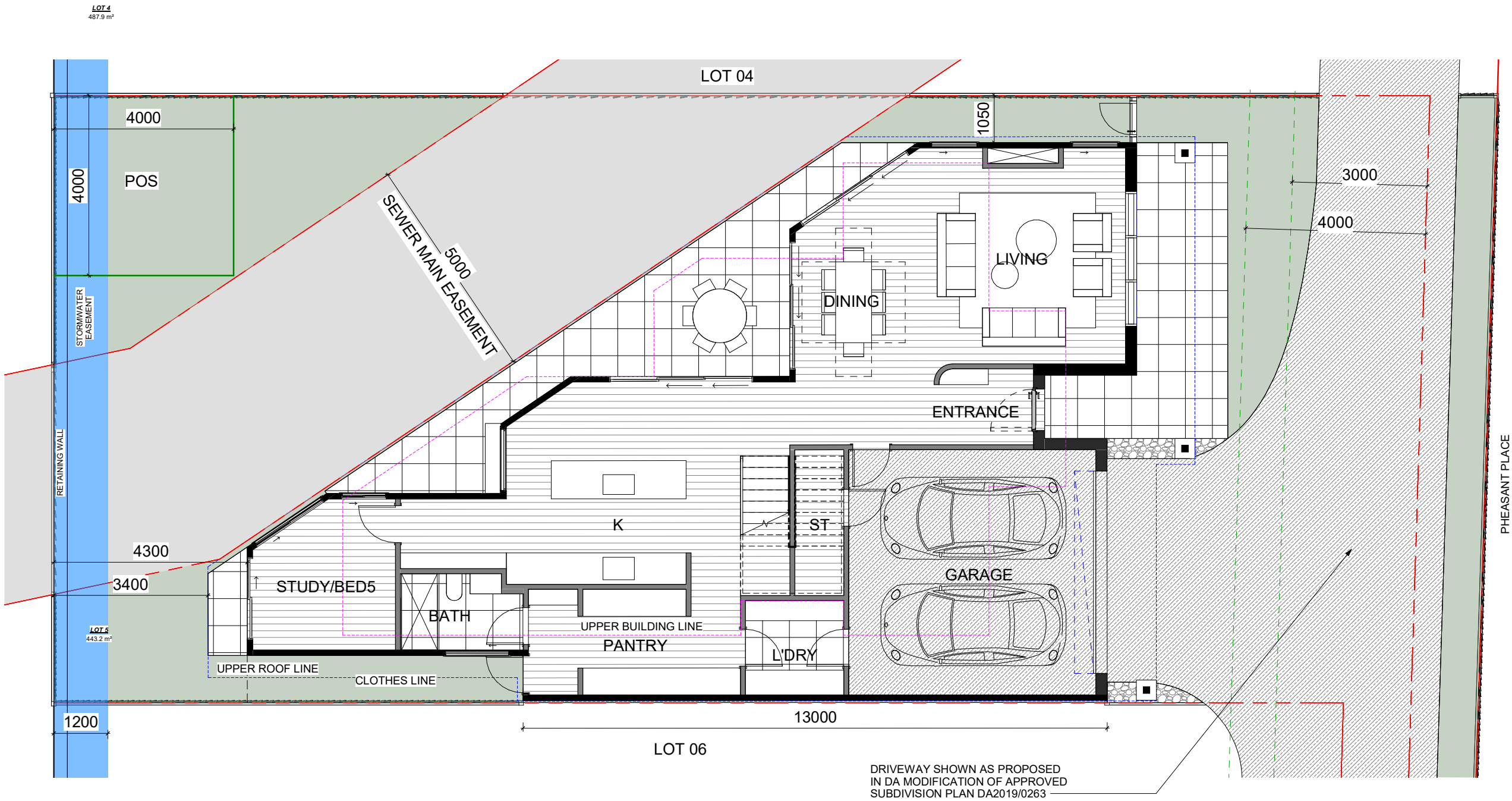
Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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

AREA SCHEDULE TYPE 6	
Name	Area
GROUND FLOOR	107 m ²
FIRST FLOOR	102 m ²
	209 m ²
GARAGE	30 m ²
	30 m ²
Grand total	239 m ²

TYPE 6 IN LOT 5



27/04/22	A	FOR DA LODGEMENT
Date	RV	Description

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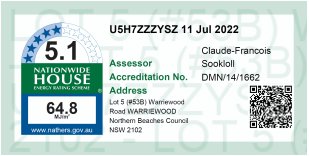
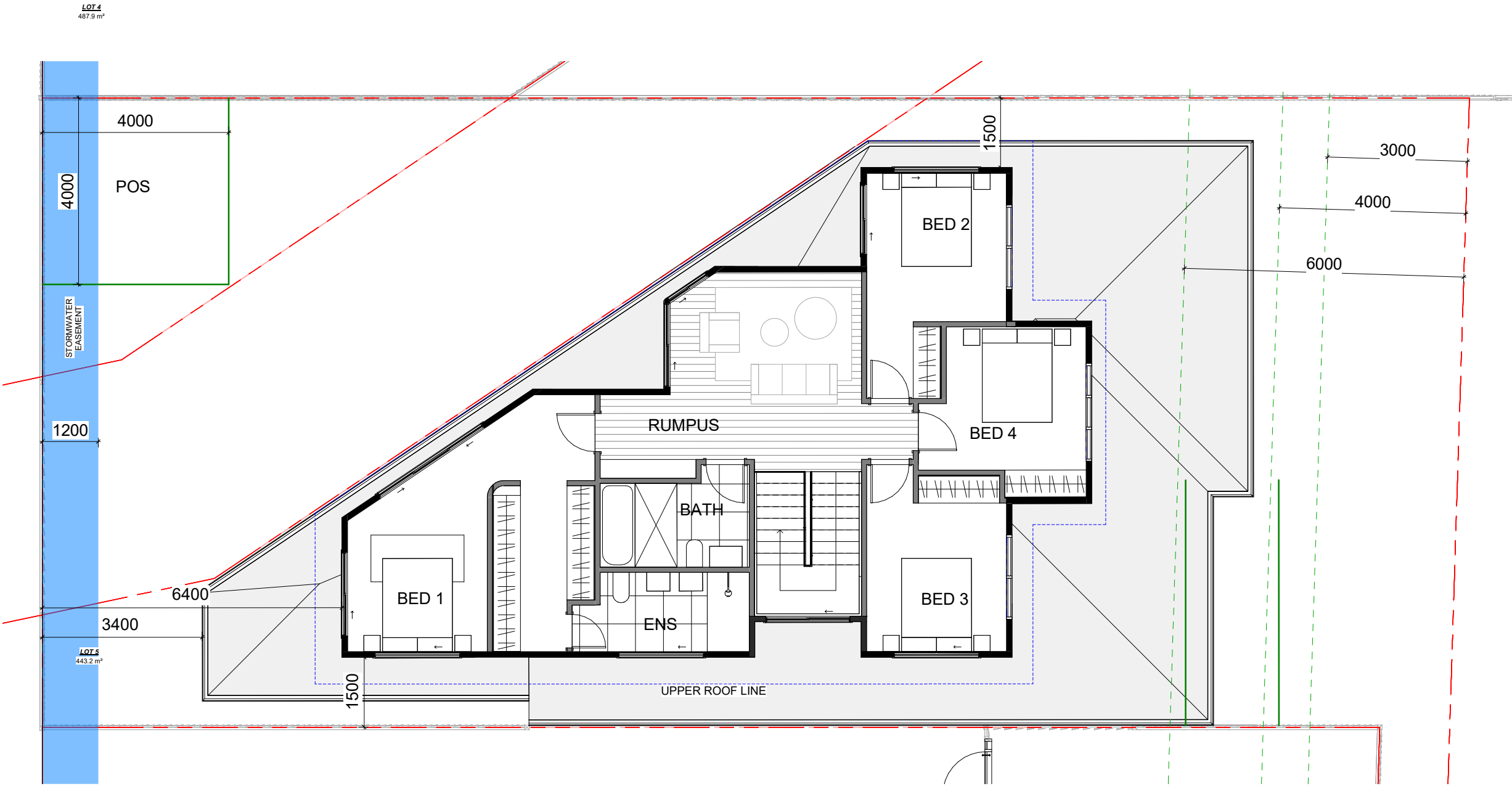
ADDRESS: LOT 05 - 53B WARRIEWOOD ROAD, WARRIEWOOD

VIEW: FLOOR PLANS - GROUND FLOOR

JOB No: RP 225	NORTH:
SCALE: A1/ 1 : 50	
DATE: 27/04/22	
DW No. DA05.03.1A	REV: A

AREA SCHEDULE TYPE 6

Name	Area
GROUND FLOOR	107 m ²
FIRST FLOOR	102 m ²
	209 m ²
GARAGE	30 m ²
	30 m ²
Grand total	239 m ²



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WARRIEWOOD**

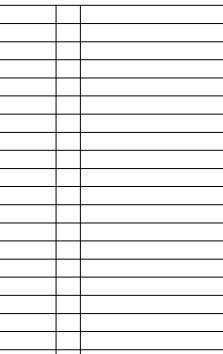
VIEW:
**FLOOR PLANS -
FIRST FLOOR**

JOB No : RP 225	NORTH:
SCALE : A1/ 1 : 50	
DATE: 27/06/22	REV:
DW No. DA05.03.1B	A

BM300, Warriewood - 53B Warriewood ROAD, CENTRAL, NT



1 **LOI**
1 : 50



2 **LOI**
1 : 50

- | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------|
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WARRIEWOOD ROAD,
WARRIEWOOD**

VIEW:

ELEVATIONS

JOB No : RP 225	NORTH:
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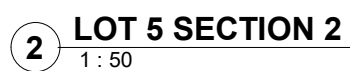
SCALE :

A1/ 1 : 50
DATE:

DW No.	REV:
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A05.03.2B	A
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BAIM 360 / Warfield - 53B Warfield Rd / DA CENTRAL M



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VIEW:

SECTIONS

JOB No : RP 225	NORTH:
SCALE : A1/As indicated	
DATE: 27/06/22	
DW No. DA05.03.3	REV: A

LOT 5
443.2 m²

1 GROUND FLOOR
1 : 50

2 FIRST FLOOR

WINDOWS/DOOR LEGEND	
AW - AWNING WINDOW	SD - SLIDING DOOR
CW - CASEMENT WINDOW	SGD - SECTIONAL GARAGE DOOR
SW - SLIDING WINDOW	
FW - FIXED WINDOW	
LV - LOUVER WINDOW	

Window Schedule - LOT 05				
Mark	Type	Height	Width	Head Height
5-1	CW 1525	1400	3000	2400
5-2	SW0610	600	1000	2350
5-3	SW0610	600	1000	2350
5-7	CW 1521	1400	2100	2250
5-8	CW1518	1457	1810	2307
5-9	SW 0518	500	1810	2250
5-10	SW 1515	1457	1500	2307
5-12	SW1526	1457	2700	2307
5-13				
5-14	SW 0518	500	1810	2250
5-16	SW 1218	1250	1810	2250
5-17	SW 0518	500	1810	2250
5-19	AW1414	1400	1400	2200
5-20	SW1518	1457	1800	2307
5-21	SW1510	1457	1000	2307
5-23	CW1518	1457	1810	2307
5-24	SW0614	600	1400	2350
5-25	SW1518	1457	1800	2357
5-26	SW1510	1457	1000	2357

Door Schedule - LOT 05			
Mark	Type	Height	Width
D5-1	SD 2428	2400	2800
D5-2	SD 2428	2400	2800
D5-5	SD 2417	2400	1780
D5-8	SD 2431	2400	3150

[illegible]

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ADDRESS:
**LOT 05 - 53B
WARRIEWOOD ROAD,
WARRIEWOOD**

VIEW:
**WINDOWS
SCHEDULE**

JOB No : RP 225	NORTH:
SCALE : A1/As indicated	
DATE: 27/06/22	
DW No. LOT 05	REV: A

[illegible]