
Appendix 3.20. Energy Efficiency Assessment

Energy Efficiency Assessment

Project address: 60-70 Bournemouth Street, Bundeena

Insulation and Glazing Requirements for 6 star compliance:

- Sub-floor insulation to reach R2.0
- Wall insulation to reach R2.5 + foil
- Ceiling insulation to reach R6.0 + sarking
- Apply double-glazing to dining-living and second living zone (including glazed sliding doors) (max. u-value to be 3.58 and SHGC 0.68) (single-glazing to kitchen casement window)
- Remaining windows to be single-glazed with aluminium-frames
- Weatherseals to entry doors and windows
- Gaps and cracks to be sealed
- Exhaust fans to be sealed

Result: **6-STARS**



Assessment Notes:

Construction drawings are assessed based on the requirements outlined in the National Construction Code 2014 Part 3.12

The energy assessment has been completed using the supplied construction drawings

Any alteration to the construction drawings or during/post construction may render the energy efficiency assessment void

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Accreditation Number

VIC/BDAV/11/2078

Assessor Email

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Assessor Reference Number

BOU-060-14b

Assessor Name

Sharelle Haines

Assessor Phone

1300033343

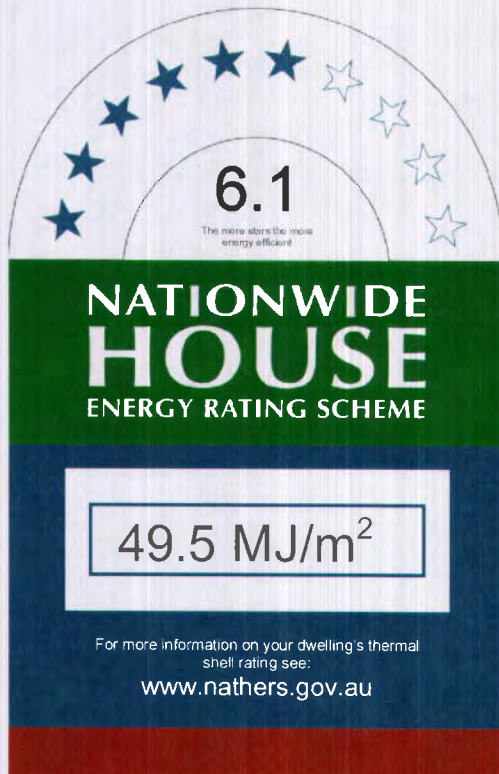
Organisation Name

EnergyLab

Date of Upload

Tuesday, September 23, 2014

1. OVERVIEW



Scan the QR code below to view the online certificate


<https://www.fr5.com.au/QRCodeLanding?PublicId=6JYA1GCGB4>

Star rating

6.1

Dwelling address

Proposed Residence, 60-70 Bournemouth Street, Bundeena

Postcode

2230

Climate zone

56

Thermal performance loads (area adjusted) MJ/m²

Heating	Cooling	Total
24.4	25.1	49.5

Floor Area (m²)

Conditioned	Unconditioned	Total	Garage
135.4	9.9	145.3	0

Energy Rating

single-dwelling rating 6.1 stars

multi-unit development (attach listing of ratings)
If selected, data specified is the average across the entire development

heating 24.4 MJ/m²

cooling 25.1 MJ/m²

Recessed downlights confirmation: Rated with Rated without

Assessor Name/Number Sharelle Haines VIC/BDAV/11/2078

Assessor Signature Sharelle Haines Date 23-09-2014

2. BUILDING FEATURES

Zones	Occupancy Type	Conditioning	Area (m ²)	Ceiling Fans
Bedroom 1	bedroom	Heated & Cooled	14.3	0
Ensuite	otherNightCond	Heated & Cooled	3.8	0
Bedroom 2	bedroom	Heated & Cooled	12	0
Bedroom 3	bedroom	Heated & Cooled	12	0
Bathroom	otherDayCond		5.6	0
Laundry	otherDayCond		2.9	0
WC	otherDayCond		1.4	0
Bedroom 4	bedroom	Heated & Cooled	13.2	0
Living	living	Heated & Cooled	15.1	0
Entry	otherDayCond	Heated & Cooled	6.1	0
Hallway	otherDayCond	Heated & Cooled	4.7	0
Kitch/Din/Liv	kitchen	Heated & Cooled	54.1	0

Window Types

Code	Glass Type	Frame Type	U-value	SHGC
GGG-05-028a	clear glass	Generic 02: Aluminium improved single-glazed	6.35	0.77
GGG-05-010a	clear/12 air gap/clear	Generic 16: Aluminium improved double-glazed	3.58	0.68

Windows

Zones	Window No.	Code	Height	Width	Orientation	Shade	Weather-strips
Bedroom 1	Opening 15	GGG-05-028a	1200	2399	E	No	Yes
Bedroom 1	Opening 6	GGG-05-028a	1400	1183	S	No	Yes
Ensuite	Opening 5	GGG-05-028a	600	1220	S	No	Yes
Bedroom 2	Opening 4	GGG-05-028a	600	1200	S	No	Yes
Bedroom 3	Opening 3	GGG-05-028a	1400	1200	S	No	Yes
Bathroom	Opening 2	GGG-05-028a	600	1200	S	No	Yes
Laundry	Opening 28	GGG-05-028a	2100	820	S	No	Yes
Bedroom 4	Opening 13	GGG-05-028a	1200	2400	W	No	Yes
Bedroom 4	Opening 1	GGG-05-028a	1400	1200	S	No	Yes
Living	Opening 7	GGG-05-010a	2100	2700	N	No	Yes
Living	Opening 14	GGG-05-010a	1500	2700	E	No	Yes
Kitch/Din/Liv	Opening 9	GGG-05-028a	700	2400	N	No	Yes
Kitch/Din/Liv	Opening 10	GGG-05-010a	2100	2700	N	No	Yes
Kitch/Din/Liv	Opening 11	GGG-05-010a	2100	2700	N	No	Yes
Kitch/Din/Liv	Opening 12	GGG-05-010a	2100	1800	W	No	Yes

Roof Window Types

Code	Glass Type	U-value	SHGC
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Roof Windows

Zones	Roof Window No.	Code	Area (m ²)	Orientation	Outdoor Shade	Indoor Shade
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Skylights

Zones	Skylight No.	Type	Area (m ²)	Orientation	Outdoor Shade	Diffuser
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External Wall Types ¹

	Thickness (mm)	Added Bulk Insulation (R)	
1: R2.5-WB : Weatherboard			Custom Wall
Timber (softwood)	12		
Glass fibre batt: R2.5	110	2.5	
Plasterboard	10		



External Walls

Zone	Wall Type	Area (m ²)	Orientation
Bedroom 1	1 : R2.5-WB : Weatherboard	9.5	E
Bedroom 1	1 : R2.5-WB : Weatherboard	8.8	S
Ensuite	1 : R2.5-WB : Weatherboard	3	S
Bedroom 2	1 : R2.5-WB : Weatherboard	7.3	S
Bedroom 3	1 : R2.5-WB : Weatherboard	7.3	S
Bathroom	1 : R2.5-WB : Weatherboard	4.4	S
Laundry	1 : R2.5-WB : Weatherboard	4.6	S
Bedroom 4	1 : R2.5-WB : Weatherboard	9.5	W
Bedroom 4	1 : R2.5-WB : Weatherboard	8	S
Living	1 : R2.5-WB : Weatherboard	8.7	N
Living	1 : R2.5-WB : Weatherboard	9.9	E
Entry	1 : R2.5-WB : Weatherboard	2.9	N
Kitch/Din/Liv	1 : R2.5-WB : Weatherboard	32.2	N
Kitch/Din/Liv	1 : R2.5-WB : Weatherboard	9.7	W

Internal Insulated Wall Types

Thickness (mm)	Added Bulk Insulation (R)
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Internal Insulated Walls

Adjacent Zones	Wall Type	Area (m ²)
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Floors²

Zone	Construction	Area (m ²)	Sub Floor Ventilation	Added Bulk Insulation (R)	Covering
Bedroom 1	Timber	14.3	encl	2.0	Carpet
Ensuite	Timber	3.8	encl	2.0	Tiles
Bedroom 2	Timber	12	encl	2.0	Carpet
Bedroom 3	Timber	12	encl	2.0	Carpet
Bathroom	Timber	5.6	encl	2.0	Tiles
Laundry	Timber	2.9	encl	2.0	Tiles
WC	Timber	1.4	encl	2.0	Tiles
Bedroom 4	Timber	13.2	encl	2.0	Carpet
Living	Timber	15.1	encl	2.0	floattimber
Entry	Timber	6.1	encl	2.0	floattimber
Hallway	Timber	4.7	encl	2.0	floattimber
Kitch/Din/Liv	Timber	54.1	encl	2.0	floattimber

Roofs²

Zone	Code	Area (m ²)	Added Bulk Insulation (R) Ceiling	Added Bulk Insulation (R) Roof
Bedroom 1	Framed	14.3	6.0	0.0
Ensuite	Framed	3.8	6.0	0.0
Bedroom 2	Framed	12	6.0	0.0
Bedroom 3	Framed	12	6.0	0.0
Bathroom	Framed	5.6	6.0	0.0
Laundry	Framed	2.9	6.0	0.0
WC	Framed	1.4	6.0	0.0
Bedroom 4	Framed	13.2	6.0	0.0
Living	Framed	15.1	6.0	0.0
Entry	Framed	6.1	6.0	0.0
Hallway	Framed	4.7	6.0	0.0
Kitch/Din/Liv	Framed	54.1	6.0	0.0

Doors

Zone	Area (m ²)	Weather-strips
Entry	1.9	Yes

Air leakage

Zone	Exhaust Fans		Wall/Ceiling Vents		Chimneys		Downlights		Unflued Gas Heaters		Heater Flues	
	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed
Bedroom 1	0	0	0	0	0	0	0	0	-	0	-	0
Ensuite	1	0	0	0	0	0	0	0	-	0	-	0
Bedroom 2	0	0	0	0	0	0	0	0	-	0	-	0
Bedroom 3	0	0	0	0	0	0	0	0	-	0	-	0
Bathroom	1	0	0	0	0	0	0	0	-	0	-	0
Laundry	1	0	0	0	0	0	0	0	-	0	-	0
WC	1	0	0	0	0	0	0	0	-	0	-	0
Bedroom 4	0	0	0	0	0	0	0	0	-	0	-	0
Living	0	0	0	0	0	0	0	0	-	0	-	0
Entry	0	0	0	0	0	0	0	0	-	0	-	0
Hallway	0	0	0	0	0	0	0	0	-	0	-	0
Kitch/Din/Liv	1	0	0	0	0	0	0	0	-	0	-	0
Total	5	0	0	0	0	0	0	0	0	0	0	0

Site Exposure:

open

Software name and version:

FirstRate5: 51011 c

Restrictions on use of this software:

FirstRate5 cannot model slab edge insulation.

3. EXPLANATORY NOTES

ABOUT THIS REPORT

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TV's etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

DISCLAIMER

The energy values quoted are for comparison purposes only, they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached certified drawing set. Changes to any of these could affect the rating.

CONTACT

For more information on the Nationwide House Energy Rating Scheme (NatHERS), visit www.nathers.gov.au
For more information on energy efficient design and insulation visit www.yourhome.gov.au

ENDNOTES

1. Each airspace within a wall construction has a thermal resistance. This varies based on a number of criteria. Each airspace in this certificate is described using these criteria. They are as follows:
Orientation (vertical, horizontal, etc); Width; Air movement (ventilated or non-ventilated); and the Emissivity (e) of the surfaces on either side of the air space. Emissivity ranges from 0.9 for common non reflective building materials to 0.03 for the shiniest reflective foil products. The figures in brackets in each description (eg 0.2/0.9; E = 0.2) refer firstly to the emissivity of each of the two vertical surfaces facing into the space (in this case one surface is 0.2, for example an anti glare coated foil, and the other 0.9, a normal building material). The value of E is the effective Emissivity of the air space taking into account the emissivity of the surfaces on either side of the air space.

2. Ceilings with zones above are described as the floor of the zone above (see Floors schedule).

Ceilings with a roof or a neighbour above are described as the roof of that zone/area (see Roofs schedule)

Project Notes