



### Sanctum Design Proposed Residential Development

To be built at **1 Tabalum Road, Balgowlah Heights NSW 2093**

Issue	File Ref	Description	Author	Date
A	19-0660	NatHERS and BASIX Assessment	FM	05/09/2019

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sanctum Design. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.



**Report Contact:** Franklyn Muorah  
Email: [franklyn@efficientliving.com.au](mailto:franklyn@efficientliving.com.au)

**License Holder:** Tracey Cools  
Accreditation Number: VIC/BDAV/12/1473

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#### **BASIX Details:**

NatHERS Certificate Number: 0004174116-02

BASIX adjusted conditioned area: 307.1m<sup>2</sup>

BASIX adjusted un-conditioned area: 20.7m<sup>2</sup>

Area adjusted heating load: 26.7 MJ/ m<sup>2</sup>/pa

Area adjusted cooling load: 18.2 MJ/ m<sup>2</sup>/pa

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#### **Specification**

Heating and cooling loads for the development have been determined using BERS Pro Plus 4.3 thermal comfort simulation software, and assessed under the thermal simulation method of the BASIX Protocol.

The following specification was used to achieve the thermal performance values. Modelling proxies are used at times and if the buildings element details vary the thermal performance specification below shall take precedence.

If there is a change to this specification during design or construction phases, please contact Efficient Living for advice and if required an updated Certificate will be issued.

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#### **Glazing Doors/Windows**

Aluminium frame double performance glazing:

U-value: 2.90 (equal to or lower than) SHGC: 0.51 (±10%)

Given values are AFRC total window system values (glass and frame)

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#### **Skylights**

None

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#### **Roof**

Concrete with R1.0 external insulation

#### **External Colour**

Light (SA<0.475)

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#### **Ceiling**

Plasterboard ceiling with R4.5 insulation (insulation only value) to soffit of concrete where roof is over

Plasterboard ceiling with R2.5 insulation (insulation only value) to soffit of concrete where balcony is over

Plasterboard ceiling with an R2.5 to garage ceiling where habitable rooms above

#### **Ceiling Penetrations**

1 sealed LED light per 4m<sup>2</sup> of ceiling area

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#### **External Wall**

Concrete walls with R2.5 insulation (insulation only value) plasterboard lined

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**External Colour**

Light (SA<0.475)

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**Walls within dwellings**

Concrete

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**Floors**

Concrete slab on ground with a minimum R2.5 insulation (insulation only value)

Suspended concrete with a minimum R3.0 insulation (insulation only value)

Concrete between levels, no insulation required

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**Floor coverings**

Timber to bedrooms and tiles elsewhere

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**External Shading**

Shading as per plans

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**Ventilation**

All external door have weather seals, all exhaust fans and chimneys have dampers, and down lights proposed will have capped fittings

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**Alternative water**

Tank size: 5,000L

Collecting from 200m<sup>2</sup> roof area

Connected to outdoor tap for irrigation of landscaping

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**Alternative Energy**

Solar Photovoltaic system minimum of 5.0 peak KW

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**Hot water system**

5 star gas instantaneous

# Nationwide House Energy Rating Scheme\* Certificate



Certificate number: **0004174116-02**

Certificate Date: **05 Sep 2019**

★ Star rating: **6.5**

BERS Pro v4.3.0.0 (3.13) cannot be used to model 'roof windows'. Roof windows are 'openable or fixed windows in a roof' and do not have a shaft, as distinct from skylights which incorporate a built-in shaft and are not ventilated. BERS Pro v4.3 can only model skylights. If a roof window is present on the floor plan then this certificate is not valid.

## Assessor details

Accreditation number: **VIC/BDAV/12/1473**  
Name: **Tracey Cools**  
Organisation: **Efficient Living Pty Ltd**  
Email: **admin@efficientliving.com.au**  
Phone: **02 9970 6181**  
Declaration of interest: **None**  
Software: **BERS Pro v4.3.0.2d (3.13)**  
AAO: **BDAV**

## Overview

### Dwelling details

Street: **1 Tabalum Road**  
Suburb: **Balgowlah Heights**  
State: **NSW** Postcode: **2093**  
Type: **New Dwelling** NCC Class: **1A**  
NatHERS climate zone: **56**  
Lot/DP number: **20/758044** Exposure: **Exposed**

### Key construction and insulation materials

(see following pages for details)

Construction: **Tilt up concrete, lined  
Waterproofing Membrane  
Concrete Slab on Ground**  
Insulation: **R2.5 wall insulation  
R2.5 ceiling insulation  
R3.0 floor insulation**  
Glazing: **ATB-006-03 B Al Thermally Broken B  
DG Argon Fill High Solar Gain low-E**

### Net floor area (m<sup>2</sup>)

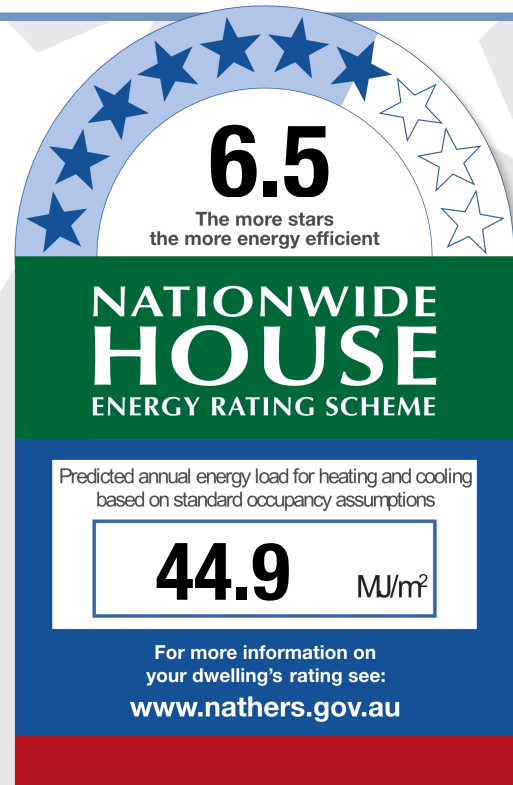
Conditioned: **305.0**  
Unconditioned: **151.0**  
Garage: **121.0**  
TOTAL: **457.0**

### Annual thermal performance loads (MJ/m<sup>2</sup>)

Heating: **26.7**  
Cooling: **18.2**  
TOTAL: **44.9**

### Plan documents

Plan ref/date: **19-0660**  
Prepared by: **Sanctum Design**



### Ceiling penetrations

(see following pages for details)

Sealed: **93**  
Unsealed: **0**  
TOTAL:\*\* **93**

\*\*NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceeded in construction then this certificate IS NOT VALID and a new certificate is required.** Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Principle downlight type: **LED**

### Window selection - default windows only

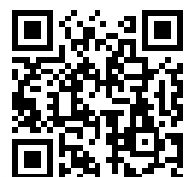
Note on allowable window values:  
Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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 on page 2.

**If any of 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.**

Scan to access this certificate online and confirm this is valid.





# Nationwide House Energy Rating Scheme\* Certificate

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## Building features

### Window type and performance value

Window ID	Window type	U-value	SHGC
ATB-006-03 B	ATB-006-03 B Al Thermally Broken B DG Argon Fill High Solar Gain low-E -Clear	2.9	0.51

### Window schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Outdoor shade
Guest Bedroom	ATB-006-03 B	n/a	2700	800	S	No Shading
Guest Bedroom	ATB-006-03 B	n/a	2700	2400	W	No Shading
Guest Bedroom	ATB-006-03 B	n/a	2700	800	W	No Shading
Rumpus	ATB-006-03 B	n/a	2700	6600	W	No Shading
Bedroom 2	ATB-006-03 B	n/a	1200	2400	N	No Shading
Bedroom 2	ATB-006-03 B	n/a	1950	2300	S	No Shading
Bedroom 2	ATB-006-03 B	n/a	2700	3200	W	No Shading
Bedroom 2	ATB-006-03 B	n/a	1950	800	W	No Shading
Ens 2	ATB-006-03 B	n/a	500	2080	N	No Shading
Ens 2	ATB-006-03 B	n/a	1500	400	E	No Shading
Stairs level 2	ATB-006-03 B	n/a	2500	4050	N	No Shading
Hall Void	ATB-006-03 B	n/a	2700	2940	W	No Shading
Hall Void	ATB-006-03 B	n/a	2700	900	W	No Shading
Bedroom 1	ATB-006-03 B	n/a	2700	800	N	No Shading
Bedroom 1	ATB-006-03 B	n/a	2700	800	S	No Shading
Bedroom 1	ATB-006-03 B	n/a	2100	1250	S	No Shading
Bedroom 1	ATB-006-03 B	n/a	2700	800	W	No Shading
Bedroom 1	ATB-006-03 B	n/a	2700	2900	W	No Shading
Bedroom 1	ATB-006-03 B	n/a	2700	800	W	No Shading
WIR	ATB-006-03 B	n/a	2100	1250	S	No Shading
Ens 1	ATB-006-03 B	n/a	2100	2100	S	No Shading
Bedroom 3	ATB-006-03 B	n/a	2100	1590	W	No Shading
Bedroom 3	ATB-006-03 B	n/a	900	2400	E	No Shading
Bedroom 3	ATB-006-03 B	n/a	2100	2400	S	No Shading
Laundry	ATB-006-03 B	n/a	900	1500	E	No Shading
Bath	ATB-006-03 B	n/a	1000	1730	E	No Shading
Bedroom 4	ATB-006-03 B	n/a	1200	2500	N	No Shading
Bedroom 4	ATB-006-03 B	n/a	1200	2400	E	No Shading
Family	ATB-006-03 B	n/a	2200	900	N	No Shading
Family	ATB-006-03 B	n/a	2200	900	N	No Shading
Family	ATB-006-03 B	n/a	900	2500	N	No Shading
Family	ATB-006-03 B	n/a	2700	3800	W	No Shading
Kitchen/Living	ATB-006-03 B	n/a	2700	675	E	No Shading
Kitchen/Living	ATB-006-03 B	n/a	2700	675	E	No Shading
Kitchen/Living	ATB-006-03 B	n/a	700	4000	E	No Shading
Kitchen/Living	ATB-006-03 B	n/a	2700	6965	S	No Shading
Kitchen/Living	ATB-006-03 B	n/a	1800	2250	S	No Shading
Kitchen/Living	ATB-006-03 B	n/a	2700	8050	W	No Shading
Kitchen/Living	ATB-006-03 B	n/a	2700	3030	W	Horizontal Louvres, Horizontal Blades
Kitchen/Living	ATB-006-03 B	n/a	800	8600	S	No Shading

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## Building features continued

Kitchen/Living	ATB-006-03 B	n/a	800	10550	E	No Shading
Kitchen/Living	ATB-006-03 B	n/a	800	10550	W	No Shading
Kitchen/Living	ATB-006-03 B	n/a	800	4550	N	No Shading
Stairs level 3	ATB-006-03 B	n/a	2700	4050	N	No Shading
Stairs level 3	ATB-006-03 B	n/a	800	2700	E	No Shading
Stairs level 3	ATB-006-03 B	n/a	800	4050	N	No Shading
Stairs level 3	ATB-006-03 B	n/a	800	2700	W	No Shading
Office	ATB-006-03 B	n/a	1700	2500	N	No Shading
Office	ATB-006-03 B	n/a	1700	1250	E	No Shading
PR	ATB-006-03 B	n/a	1400	900	E	No Shading
BP	ATB-006-03 B	n/a	1400	900	E	No Shading

## Roof window and skylight type and performance value

ID	Window type	U-value	SHGC
None Present			

## Roof window and skylight schedule

Location	ID	Roof window/skylight no.	Area (m²)	Orientation	Outdoor shade	Indoor shade/diffuser
None Present						

## External wall type

ID	Wall type	Insulation	Wall wrap or foil
EW-1	Tilt up concrete, lined	No insulation	No
EW-2	Tilt up concrete, lined	Bulk Insulation R2.5	No

## External wall schedule

Location	ID	Width (mm)	Height (mm)	Orientation	Fixed Shade	Eaves (mm)
Garage 1	EW-1	6702	2950	NW	No	0
Garage 1	EW-1	2040	2950	E	No	0
Garage 1	EW-1	8900	2950	S	No	0
Garage 1	EW-1	10428	2950	SE	No	0
Garage 1	EW-1	6224	2950	SW	No	0
Plant room	EW-1	5340	2950	N	No	0
Plant room	EW-1	700	2950	E	No	0
Pool Equip St	EW-1	6926	2950	NW	No	0
Pool Equip St	EW-1	3740	2950	N	No	0
Stairs Garage L	EW-1	2740	2950	E	No	0
Stairs Garage L	EW-1	4140	2950	N	No	0
Guest Bedroom	EW-2	3600	2700	N	No	1625
Guest Bedroom	EW-2	540	2700	N	No	0
Guest Bedroom	EW-2	2400	2700	S	No	13425
Guest Bedroom	EW-2	3500	2700	W	No	2800
Bath Level 1	EW-2	2240	2700	N	No	0
Bath Level 1	EW-2	700	2700	E	No	0

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## Building features continued

Rumpus	EW-2	1340	2700	E	No	0
Rumpus	EW-2	3600	2700	S	No	0
Rumpus	EW-2	5300	2700	E	No	0
Rumpus	EW-2	1500	2700	S	No	0
Rumpus	EW-2	3200	2700	S	No	6575
Rumpus	EW-2	6640	2700	W	No	5550
Stairs level 1	EW-2	2740	2700	E	No	0
Stairs level 1	EW-2	4140	2700	N	No	0
Bedroom 2	EW-2	3740	2700	N	No	400
Bedroom 2	EW-2	2500	2700	S	No	12125
Bedroom 2	EW-2	4800	2700	W	No	800
Ens 2	EW-2	2140	2700	N	No	400
Ens 2	EW-2	700	2700	E	No	8100
Stairs level 2	EW-2	4080	2700	N	No	500
Hall Void	EW-2	4080	2700	W	No	3300
Bedroom 1	EW-2	2500	2700	N	No	9400
Bedroom 1	EW-2	800	2700	E	No	9500
Bedroom 1	EW-2	4000	2700	S	No	3100
Bedroom 1	EW-2	4800	2700	W	No	1375
WIR	EW-2	2380	2700	S	No	3700
Ens 1	EW-2	2180	2700	S	No	3700
Bedroom 3	EW-2	1800	2700	W	No	10650
Bedroom 3	EW-2	4340	2700	E	No	400
Bedroom 3	EW-2	4300	2700	S	No	1900
Laundry	EW-2	1200	2700	N	No	8450
Laundry	EW-2	2340	2700	E	No	400
Bath	EW-2	2980	2700	E	No	1600
Bedroom 4	EW-2	2756	2700	N	No	467
Bedroom 4	EW-2	500	2700	N	No	500
Bedroom 4	EW-2	361	2700	NE	No	451
Bedroom 4	EW-2	4700	2700	E	No	500
Bedroom 4	EW-2	1700	2700	S	No	11800
Family	EW-2	4500	2700	N	No	1000
Family	EW-2	700	2700	E	No	8600
Family	EW-2	2440	2700	S	No	12775
Family	EW-2	4200	2700	W	No	2300
Kitchen/Living	EW-2	2980	2700	E	No	2600
Kitchen/Living	EW-2	6240	2700	E	No	700
Kitchen/Living	EW-2	10700	2700	S	No	600
Kitchen/Living	EW-2	8158	2700	W	No	4643
Kitchen/Living	EW-2	3940	2700	W	No	4800
Stairs level 3	EW-2	4080	2700	N	No	1450
Office	EW-2	2756	2700	N	No	1020
Office	EW-2	500	2700	N	No	1075
Office	EW-2	283	2700	NE	No	1025
Office	EW-2	2840	2700	E	No	1000
PR	EW-2	1840	2700	E	No	1000
PR	EW-2	500	2700	S	No	11900

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## Building features continued

BP	EW-2	1780	2700	E	No	700
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## Internal wall type

Wall type	Area (m <sup>2</sup> )	Insulation	Wall wrap or foil
IW-1 - Tilt Concrete	392.0	No insulation	No

## Floors

Location	Construction	Area (m <sup>2</sup> )	Sub floor ventilation	Added insulation	Covering
Lift garage Lev	Concrete Slab on Ground 200mm	2.5	None	No Insulation	Ceramic Tiles 8mm
Lift Level 1/Lift garage Lev	Concrete Above Plasterboard 200mm	2.5		No Insulation	Ceramic Tiles 8mm
Lift Level 2/Lift Level 1	Concrete Above Plasterboard 200mm	2.5		No Insulation	Ceramic Tiles 8mm
Lift Level 3/Lift Level 2	Concrete Above Plasterboard 200mm	2.5		No Insulation	Ceramic Tiles 8mm
Garage 1	Concrete Slab on Ground 200mm	68.3	None	No Insulation	Bare
Plant room	Concrete Slab on Ground 200mm	17.9	None	No Insulation	Bare
Pool Equip St	Concrete Slab on Ground 200mm	35.1	None	No Insulation	Bare
Stairs Garage L	Concrete Slab on Ground 200mm	8.3	None	No Insulation	Ceramic Tiles 8mm
Guest Bedroom/Plant room	Concrete Above Plasterboard 200mm	10.4		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Guest Bedroom/Pool Equip St	Concrete Above Plasterboard 200mm	3.8		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Bath Level 1/Plant room	Concrete Above Plasterboard 200mm	7.6		Bulk Insulation R2.5	Ceramic Tiles 8mm
Rumpus/Garage 1	Concrete Above Plasterboard 200mm	14.7		Bulk Insulation R2.5	Ceramic Tiles 8mm
Rumpus	Concrete Slab on Ground 200mm	21.3	None	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm
Stairs level 1/Stairs Garage L	Concrete Above Plasterboard 200mm	8.3		No Insulation	Ceramic Tiles 8mm
Bedroom 2/Guest Bedroom	Concrete Above Plasterboard 150mm	12.6		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Bath Level 1	Concrete Above Plasterboard 150mm	2.7		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Rumpus	Concrete Above Plasterboard 150mm	5.2		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2	Suspended Concrete Slab 150mm	2.4	Totally Open	Bulk Insulation in Contact with Floor R3	Cork Tiles or Parquetry 8mm
Ens 2/Bath Level 1	Concrete Above Plasterboard	4.9		No Insulation	Ceramic Tiles



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## Building features continued

	200mm				8mm
Stairs level 2/Stairs level 1	Concrete Above Plasterboard 200mm	8.1		No Insulation	Ceramic Tiles 8mm
Hall Void/Rumpus	Concrete Above Plasterboard 200mm	22.0		No Insulation	Ceramic Tiles 8mm
Hall Void	Concrete Slab on Ground 200mm	11.3	None	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm
Bedroom 1/Rumpus	Concrete Above Plasterboard 150mm	2.5		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 1	Suspended Concrete Slab 150mm	16.4	Totally Open	Bulk Insulation in Contact with Floor R3	Cork Tiles or Parquetry 8mm
WIR/Rumpus	Concrete Above Plasterboard 200mm	2.8		No Insulation	Cork Tiles or Parquetry 8mm
WIR	Concrete Slab on Ground 200mm	6.6	None	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Ens 1	Concrete Slab on Ground 200mm	8.5	None	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm
Bedroom 3	Concrete Slab on Ground 200mm	18.5	None	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Laundry	Concrete Slab on Ground 200mm	7.0	None	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm
Bath	Concrete Slab on Ground 200mm	9.1	None	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm
Bedroom 4	Concrete Slab on Ground 200mm	15.5	None	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Family/Bedroom 2	Concrete Above Plasterboard 200mm	12.8		No Insulation	Ceramic Tiles 8mm
Family/Ens 2	Concrete Above Plasterboard 200mm	5.2		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Bedroom 2	Concrete Above Plasterboard 150mm	1.8		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Hall Void	Concrete Above Plasterboard 150mm	28.4		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Bedroom 1	Concrete Above Plasterboard 150mm	2.9		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /WIR	Concrete Above Plasterboard 150mm	9.9		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Ens	Concrete Above Plasterboard 150mm	9.1		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Bedroom 3	Concrete Above Plasterboard 150mm	18.7		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Laundry	Concrete Above Plasterboard 150mm	1.9		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Bath	Concrete Above Plasterboard 150mm	9.5		No Insulation	Ceramic Tiles 8mm
Kitchen/Living /Bedroom 4	Concrete Above Plasterboard 150mm	2.1		No Insulation	Ceramic Tiles 8mm
Kitchen/Living	Suspended Concrete Slab 150mm	28.3	Totally Open	Bulk Insulation in Contact with Floor R3	Ceramic Tiles 8mm

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## Building features continued

Stairs level 3/Stairs level 2	Concrete Above Plasterboard 200mm	8.1	No Insulation	Ceramic Tiles 8mm
Office/Bedroom 4	Concrete Above Plasterboard 200mm	9.7	No Insulation	Ceramic Tiles 8mm
PR/Bedroom 4	Concrete Above Plasterboard 200mm	3.3	No Insulation	Ceramic Tiles 8mm
BP/Laundry	Concrete Above Plasterboard 200mm	5.1	No Insulation	Ceramic Tiles 8mm

## Ceiling type

Location	Construction	Added insulation	Roof space above
Lift garage Lev	Concrete Above Plasterboard	No Insulation	No
Lift Level 1	Concrete Above Plasterboard	No Insulation	No
Lift Level 2	Concrete Above Plasterboard	No Insulation	No
Lift Level 3	Concrete, Plasterboard	Bulk Insulation R4.5	Yes
Garage 1	Concrete, Plasterboard	No insulation	Yes
Garage 1	Concrete Above Plasterboard	Bulk Insulation R2.5	No
Plant room	Concrete Above Plasterboard	Bulk Insulation R2.5	No
Pool Equip St	Concrete, Plasterboard	No insulation	Yes
Pool Equip St	Concrete Above Plasterboard	Bulk Insulation R2.5	No
Stairs Garage L	Concrete Above Plasterboard	No Insulation	No
Guest Bedroom	Plasterboard	Bulk Insulation R2.5	Yes
Guest Bedroom	Concrete Above Plasterboard	No Insulation	No
Bath Level 1	Concrete Above Plasterboard	No Insulation	No
Rumpus	Plasterboard	Bulk Insulation R2.5	Yes
Rumpus	Concrete Above Plasterboard	No Insulation	No
Stairs level 1	Concrete Above Plasterboard	No Insulation	No
Bedroom 2	Plasterboard	Bulk Insulation R2.5	Yes
Bedroom 2	Concrete Above Plasterboard	No Insulation	No
Ens 2	Concrete Above Plasterboard	No Insulation	No
Stairs level 2	Concrete Above Plasterboard	No Insulation	No
Hall Void	Plasterboard	Bulk Insulation R2.5	Yes
Hall Void	Concrete Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R2.5	Yes
Bedroom 1	Concrete Above Plasterboard	No Insulation	No
WIR	Concrete Above Plasterboard	No Insulation	No
Ens 1	Concrete Above Plasterboard	No Insulation	No
Bedroom 3	Concrete Above Plasterboard	No Insulation	No
Laundry	Concrete Above Plasterboard	No Insulation	No

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## Building features continued

Bath	Concrete Above Plasterboard	No Insulation	No
Bedroom 4	Concrete Above Plasterboard	No Insulation	No
Family	Concrete, Plasterboard	Bulk Insulation R4.5	Yes
Kitchen/Living	Concrete, Plasterboard	Bulk Insulation R4.5	Yes
Stairs level 3	Concrete, Plasterboard	Bulk Insulation R4.5	Yes
Office	Concrete, Plasterboard	Bulk Insulation R4.5	Yes
PR	Concrete, Plasterboard	Bulk Insulation R4.5	Yes
BP	Concrete, Plasterboard	Bulk Insulation R4.5	Yes

## Ceiling penetrations

Location	Number	Type	Diameter (mm)	Sealed/unsealed
Guest Bedroom	3	Downlights - LED	150	Sealed
Bath Level 1	2	Downlights - LED	150	Sealed
Bath Level 1	1	Exhaust Fans	300	Sealed
Rumpus	9	Downlights - LED	150	Sealed
Stairs level 1	1	Downlights - LED	150	Sealed
Bedroom 2	4	Downlights - LED	150	Sealed
Ens 2	1	Downlights - LED	150	Sealed
Ens 2	1	Exhaust Fans	300	Sealed
Stairs level 2	2	Downlights - LED	150	Sealed
Hall Void	8	Downlights - LED	150	Sealed
Bedroom 1	4	Downlights - LED	150	Sealed
WIR	2	Downlights - LED	150	Sealed
Ens 1	2	Downlights - LED	150	Sealed
Ens 1	1	Exhaust Fans	300	Sealed
Bedroom 3	4	Downlights - LED	150	Sealed
Laundry	1	Downlights - LED	150	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Bath	2	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed
Bedroom 4	3	Downlights - LED	150	Sealed
Family	4	Downlights - LED	150	Sealed
Kitchen/Living	28	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Stairs level 3	2	Downlights - LED	150	Sealed
Office	2	Downlights - LED	150	Sealed
PR	1	Downlights - LED	150	Sealed
PR	1	Exhaust Fans	300	Sealed
BP	1	Downlights - LED	150	Sealed

## Ceiling fans

\* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see [www.nathers.gov.au](http://www.nathers.gov.au)

## Nationwide House Energy Rating Scheme\* Certificate

Certificate number: **0004174116-02**

Certificate Date:

**05 Sep 2019**

★ Star rating:

**6.5**



### Building features continued

Location	Number	Diameter (mm)
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None Present		
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### Roof type

Construction	Added insulation	Roof colour
Waterproofing Membrane	No Insulation, Only an Air Gap	Light
Concrete	No Insulation, Only an Air Gap	Light
Waterproofing Membrane	Bulk Insulation, No Air Gap Above R1	Light

# Nationwide House Energy Rating Scheme\* Certificate

Certificate number: 0004174116-02

Certificate Date: 05 Sep 2019

★ Star rating: 6.5



## Additional information

## 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, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

### General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in the report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using the underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance.

The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

### Accredited Assessors

To ensure you get a high-quality, professional NatHERS House Energy Rating report, you should always use an accredited assessor, 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. Non-accredited assessors do not have this level of quality assurance or any on-going training requirements.

If you have any questions or concerns about this report, please direct them to your assessor in the first instance.

If your assessor is unable to address your questions or concerns, please contact their AAO listed under 'assessor details'. You can also find a range of information about accredited assessors on the AAO websites.

### 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 drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

### Contact

For more information on the Nationwide House Energy Rating Scheme (NatHERS), visit [www.nathers.gov.au](http://www.nathers.gov.au)

For more information on energy efficient design and insulation visit [www.yourhome.gov.au](http://www.yourhome.gov.au)



# BASIX<sup>®</sup>Certificate

Building Sustainability Index [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

## Single Dwelling

Certificate number: 1040129S\_03




This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 06/10/2017 published by the Department. This document is available at [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

Secretary

Date of issue: Thursday, 05 September 2019

To be valid, this certificate must be lodged within 3 months of the date of issue.



Project summary		
Project name	1 Tabalum Road, Balgowlah Heights_03	
Street address	1 Tabalum Road Balgowlah Heights 2093	
Local Government Area	Northern Beaches Council	
Plan type and plan number	deposited 758044	
Lot no.	20	
Section no.	20	
Project type	separate dwelling house	
No. of bedrooms	5	
Project score		
Water	 42	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 66	Target 50

### Certificate Prepared by

Name / Company Name: Efficient Living Pty Ltd

ABN (if applicable): 82116346082

# Description of project

## Project address

Project name	1 Tabalum Road, Balgowlah Heights_03
Street address	1 Tabalum Road Balgowlah Heights 2093
Local Government Area	Northern Beaches Council
Plan type and plan number	Deposited Plan 758044
Lot no.	20
Section no.	20

## Project type

Project type	separate dwelling house
No. of bedrooms	5

## Site details

Site area (m <sup>2</sup> )	7538
Roof area (m <sup>2</sup> )	275
Conditioned floor area (m2)	313.0
Unconditioned floor area (m2)	29.0
Total area of garden and lawn (m2)	339

## Assessor details and thermal loads

Assessor number	BDAV/12/1473
Certificate number	0004174116-02
Climate zone	56
Area adjusted cooling load (MJ/m <sup>2</sup> .year)	18
Area adjusted heating load (MJ/m <sup>2</sup> .year)	27

## Project score

Water	✓ 42	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 66	Target 50

## Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Fixtures</b>			
The applicant must install showerheads with a minimum rating of 4 star (> 6 but <= 7.5 L/min plus spray force and/or coverage tests) in all showers in the development.		✓	✓
The applicant must install a toilet flushing system with a minimum rating of 5 star in each toilet in the development.		✓	✓
The applicant must install taps with a minimum rating of 5 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 5 star in each bathroom in the development.		✓	
<b>Alternative water</b>			
<b>Rainwater tank</b>			
The applicant must install a rainwater tank of at least 5000 litres on the site. This rainwater tank must meet, and be installed in accordance with, the requirements of all applicable regulatory authorities.	✓	✓	✓
The applicant must configure the rainwater tank to collect rain runoff from at least 200 square metres of the roof area of the development (excluding the area of the roof which drains to any stormwater tank or private dam).		✓	✓
The applicant must connect the rainwater tank to: <ul style="list-style-type: none"> <li>all toilets in the development</li> <li>the cold water tap that supplies each clothes washer in the development</li> <li>at least one outdoor tap in the development (Note: NSW Health does not recommend that rainwater be used for human consumption in areas with potable water supply.)</li> <li>a tap that is located within 10 metres of the swimming pool in the development</li> <li>a tap that is located within 10 metres of the outdoor spa in the development</li> </ul>		✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
<b>Swimming pool</b>			























Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
The swimming pool must not have a volume greater than 45 kilolitres.	✓	✓	
The swimming pool must have a pool cover.		✓	
The swimming pool must be outdoors.	✓	✓	
Outdoor Spa			
The spa must not have a volume greater than 6 kilolitres.	✓	✓	
The spa must have a spa cover.		✓	

Thermal Comfort Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Simulation Method</b>			
The applicant must attach the certificate referred to under "Assessor Details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for an occupation certificate for the proposed development.			
The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX certificate, including the Cooling and Heating loads shown on the front page of this certificate.			
The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Assessor Certificate requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor to certify that this is the case. The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.	✓	✓	✓
The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
The applicant must construct the floors and walls of the dwelling in accordance with the specifications listed in the table below.	✓	✓	✓

Floor and wall construction	Area
floor - concrete slab on ground	237.0 square metres
floor - suspended floor/open subfloor	48.0 square metres
floor - suspended floor above garage	All or part of floor area





Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Hot water</b>			
The applicant must install the following hot water system in the development, or a system with a higher energy rating: gas instantaneous with a performance of 5 stars.	✓	✓	✓
<b>Cooling system</b>			
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 2.5 - 3.0		✓	✓
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: 3-phase airconditioning; Energy rating: EER 2.5 - 3.0		✓	✓
<b>Heating system</b>			
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 2.5 - 3.0		✓	✓
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: 3-phase airconditioning; Energy rating: EER 2.5 - 3.0		✓	✓
<b>Ventilation</b>			
The applicant must install the following exhaust systems in the development:			
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: manual switch on/off		✓	✓
Kitchen: individual fan, ducted to façade or roof; Operation control: manual switch on/off		✓	✓
Laundry: individual fan, ducted to façade or roof; Operation control: manual switch on/off		✓	✓
<b>Artificial lighting</b>			
The applicant must ensure that the "primary type of artificial lighting" is fluorescent or light emitting diode (LED) lighting in each of the following rooms, and where the word "dedicated" appears, the fittings for those lights must only be capable of accepting fluorescent or light emitting diode (LED) lamps:			
• at least 5 of the bedrooms / study;		✓	✓
• at least 4 of the living / dining rooms;		✓	✓
• the kitchen;		✓	✓


Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<ul style="list-style-type: none"> <li>all bathrooms/toilets;</li> <li>the laundry;</li> <li>all hallways;</li> </ul>		  	  
<b>Natural lighting</b>			
The applicant must install a window and/or skylight in the kitchen of the dwelling for natural lighting.			
The applicant must install a window and/or skylight in 4 bathroom(s)/toilet(s) in the development for natural lighting.			
<b>Swimming pool</b>			
The applicant must install the following heating system for the swimming pool in the development (or alternatively must not install any heating system for the swimming pool): electric heat pump			
The applicant must install a timer for the swimming pool pump in the development.			
<b>Outdoor spa</b>			
The applicant must install the following heating system for the spa in the development (or alternatively must not install any heating system for the spa): electric heat pump			
The applicant must install a timer for the spa pump in the development.			
<b>Alternative energy</b>			
The applicant must install a photovoltaic system with the capacity to generate at least 5 peak kilowatts of electricity as part of the development. The applicant must connect this system to the development's electrical system.			
<b>Other</b>			
The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling.			
The applicant must construct each refrigerator space in the development so that it is "well ventilated", as defined in the BASIX definitions.			
The applicant must install a fixed outdoor clothes drying line as part of the development.			

## Legend

In these commitments, "applicant" means the person carrying out the development.

Commitments identified with a  in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).

Commitments identified with a  in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.

Commitments identified with a  in the "Certifier check" column must be certified by a certifying authority as having been fulfilled, before a final occupation certificate (either interim or final) for the development may be issued.