

## Watershed Design Proposed Residential Development

To be built at **5A Hilltop Crescent, Fairlight**

Issue	File Ref	Description	Author	Date
A	18-1824	NatHERS and BASIX Assessment	MP / DH	22/03/2019

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Watershed 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.



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**Assessor:** **Manoela Place**  
Email: [manoela@efficientliving.com.au](mailto:manoela@efficientliving.com.au)

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

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### **BASIX Details**

NatHERS Certificate Number: 0003690138

BASIX adjusted conditioned area: 318 m<sup>2</sup>

Area adjusted heating load: 40.0 MJ/m<sup>2</sup>/pa

BASIX adjusted un-conditioned area: 20 m<sup>2</sup>

Area adjusted cooling load: 21.0 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 assess 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 specifications 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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### **Floors**

Concrete slab on ground, R1.0 insulation

Concrete between levels, R3.0 between garage and habitable rooms only

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### **External Walls**

Cavity brick with a minimum R0.9 insulation (Rt 1.89 total system value)

Lightweight cladding with a minimum R2.0 insulation + foil (Rt 2.82 total system value)

(Note: no insulation is required to garage walls)

### **External Colour**

Medium ( $0.475 < SA < 0.7$ )

### **Walls within dwellings**

Plasterboard on studs with a R2.0 to internal garage walls only

Cavity brick to LG

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## Windows

Aluminium framed Low E glazing to all windows:

U-Value: 4.8 (equal to or lower than) SHGC: 0.59 ( $\pm 10\%$ )

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

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## Skylights

Double glazing

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## Ceilings

Plasterboard ceiling, with an R 3.0 insulation (insulation value only) where roof or terrace is above

## Ceiling penetrations

Loss of ceiling insulation has not been accounted for in accordance with BASIX Thermal Protocol 4.13.1 and NatHERS Technical Note 1.2

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## Roof

Metal roof with a foil backed blanket (R1.3 up and R1.3 down)

Concrete roof no insulation

## External Colour

Medium ( $0.475 < SA < 0.7$ )

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## Floor coverings

Modelled as per floor plans.

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## External Shading

Operable blinds and screens as per stamped plans and elevations

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## Ventilation

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

# Nationwide House Energy Rating Scheme\* Certificate



Certificate number: **0003690138**

Certificate Date: **14 Mar 2019**

★ Star rating: **5.4**

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 Liiving 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: **5A Hilltop Crescent**

Suburb: **Fairlight**

State: **NSW**

Postcode: **2094**

Type: **New Dwelling**

NCC Class: **1A**

NatHERS

climate zone: **56**

Lot/DP

number: **7/5711**

Exposure: **Suburban**

### Key construction and insulation materials

(see following pages for details)

Construction: **Cavity Brick**

**Concrete**

**Concrete Slab on Ground**

Insulation:

**R0.9 wall insulation**

**R3.0 ceiling insulation**

**R1.0 floor insulation**

Glazing:

**ALM-004-01 A Aluminium B DG Air Fill**

**Clear-Clear**

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

Conditioned: **313.0**

Unconditioned: **76.0**

Garage: **53.0**

TOTAL: **390.0**

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

Heating: **40.0**

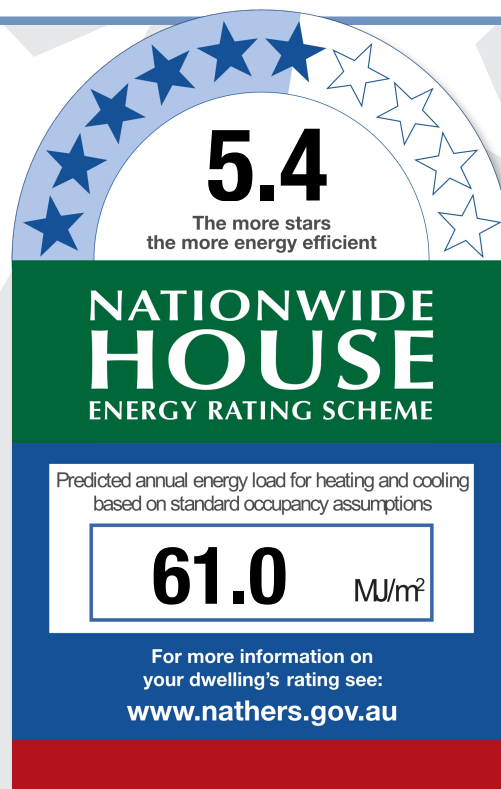
Cooling: **21.0**

TOTAL: **61.0**

### Plan documents

Plan ref/date: **18-1824**

Prepared by: **Watershed Design**



### Ceiling penetrations

(see following pages for details)

Sealed: **0**

Unsealed: **0**

TOTAL:\*\* **0**

\*\*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: **Unknown**

### 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.





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## Building features

### Window type and performance value

Window ID	Window type	U-value	SHGC
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59

### Window schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Outdoor shade
Bedroom 1 LG	ALM-004-01 A	n/a	700	700	W	No Shading
Bedroom 1 LG	ALM-004-01 A	n/a	2600	700	S	No Shading
Bedroom 1 LG	ALM-004-01 A	n/a	2600	1000	S	No Shading
Ensuite LG	ALM-004-01 A	n/a	700	1700	W	No Shading
Rumpus LG	ALM-004-01 A	n/a	2600	2700	S	No Shading
Rumpus LG	ALM-004-01 A	n/a	2600	1900	S	No Shading
Bedroom 6 LG	ALM-004-01 A	n/a	700	700	E	No Shading
Bedroom 6 LG	ALM-004-01 A	n/a	1900	700	S	No Shading
Bedroom 6 LG	ALM-004-01 A	n/a	1900	1400	S	No Shading
Ensuite 6 LG	ALM-004-01 A	n/a	700	1700	E	No Shading
Bedroom 3 GF	ALM-004-01 A	n/a	1700	800	E	No Shading
Bedroom 3 GF	ALM-004-01 A	n/a	1900	2900	S	No Shading
Ensuite 3 GF	ALM-004-01 A	n/a	1700	800	E	No Shading
Ensuite 3 GF	ALM-004-01 A	n/a	700	1600	E	No Shading
Bath 2 GF	ALM-004-01 A	n/a	1900	800	E	No Shading
Bedroom 2 GF	ALM-004-01 A	n/a	1900	2700	E	No Shading
Ldry	ALM-004-01 A	n/a	2600	900	E	No Shading
Ldry	ALM-004-01 A	n/a	1700	800	E	No Shading
Garage	ALM-004-01 A	n/a	3040	1050	W	No Shading
Garage	ALM-004-01 A	n/a	500	3100	N	No Shading
Entry	ALM-004-01 A	n/a	2600	2100	N	No Shading
Entry	ALM-004-01 A	n/a	2600	1000	N	No Shading
Music GF	ALM-004-01 A	n/a	2600	1900	S	No Shading
Music GF	ALM-004-01 A	n/a	2600	1900	S	No Shading
Bedroom 4 GF	ALM-004-01 A	n/a	2600	2700	S	No Shading
Bedroom 4 GF	ALM-004-01 A	n/a	1700	800	W	No Shading
Night Time 2	ALM-004-01 A	n/a	1900	800	W	No Shading
Night Time 2	ALM-004-01 A	n/a	700	1200	W	No Shading
Bath 1 GF	ALM-004-01 A	n/a	1900	800	W	No Shading
Bath 1 GF	ALM-004-01 A	n/a	700	1200	W	No Shading
Bedroom 5 GF	ALM-004-01 A	n/a	1900	2700	W	No Shading
Bedroom 5 GF	ALM-004-01 A	n/a	2600	2700	N	No Shading
Kitchen/Living	ALM-004-01 A	n/a	2700	5000	S	No Shading
Kitchen/Living	ALM-004-01 A	n/a	2600	2300	N	No Shading
Kitchen/Living	ALM-004-01 A	n/a	2600	2700	N	Vertical Louvres, Horizontal Blades
Kitchen/Living	ALM-004-01 A	n/a	2400	2900	W	Vertical Louvres, Horizontal Blades
Kitchen/Living	ALM-004-01 A	n/a	2600	1599	N	No Shading
Kitchen/Living	ALM-004-01 A	n/a	700	3200	E	No Shading
Kitchen/Living	ALM-004-01 A	n/a	700	1700	E	No Shading
Kitchen/Living	ALM-004-01 A	n/a	2300	1000	S	No Shading
Kitchen/Living	ALM-004-01 A	n/a	2600	900	E	No Shading

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## Building features continued

Kitchen/Living	ALM-004-01 A	n/a	2600	900	E	No Shading
WC	ALM-004-01 A	n/a	700	1700	E	No Shading
Bedroom 1 UF	ALM-004-01 A	n/a	2700	3400	S	No Shading
Ensuite 1 UF	ALM-004-01 A	n/a	2300	1000	S	No Shading
Ensuite 1 UF	ALM-004-01 A	n/a	1500	1800	N	Vertical Louvres, Horizontal Blades
Void - Landing	ALM-004-01 A	n/a	3000	2800	S	No Shading
Void - Landing	ALM-004-01 A	n/a	900	4900	N	No Shading
Void - Landing	ALM-004-01 A	n/a	600	4800	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	Cavity Brick	Foil Anti-glare one side and Reflective other of the Bulk Insulation R0.9	Yes
EW-2	Brick Veneer	No insulation	No
EW-3	Weatherboard Cavity Panel Direct Fix	Foil, Anti-glare one side + Bulk Insulation R2	Yes
EW-4	Fibro Cavity Panel on Battens	Reflective foil with bulk no gap R2.5	Yes
EW-5	Fibro Cavity Panel on Battens	Reflective foil with bulk no gap R2	Yes

## External wall schedule

Location	ID	Width (mm)	Height (mm)	Orientation	Fixed Shade	Eaves (mm)
Bedroom 1 LG	EW-1	3445	1500	W	No	0
Bedroom 1 LG	EW-1	3445	1100	W	No	0
Bedroom 1 LG	EW-1	3345	2600	S	No	0
Ensuite LG	EW-1	1745	1500	W	No	0
Ensuite LG	EW-1	1745	1100	W	No	0
Ensuite LG	EW-1	3345	2600	N	No	0
Rumpus LG	EW-1	2300	2600	W	No	0
Rumpus LG	EW-1	1145	2600	N	No	0
Rumpus LG	EW-1	5090	2600	S	No	0
Bedroom 6 LG	EW-1	3445	1500	E	No	0
Bedroom 6 LG	EW-1	3445	1100	E	No	0
Bedroom 6 LG	EW-1	4045	2600	S	No	0
Ensuite 6 LG	EW-1	4045	2600	N	No	0
Ensuite 6 LG	EW-1	1745	1500	E	No	0

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Ensuite 6 LG	EW-1	1745	1100	E	No	0
Plant and store	EW-1	3945	2600	N	No	0
Plant and store	EW-1	2300	2600	E	No	0
Bedroom 3 GF	EW-1	3795	2600	E	No	0
Bedroom 3 GF	EW-1	3795	2600	S	No	600
Ensuite 3 GF	EW-1	2690	2600	E	No	0
Bath 2 GF	EW-1	2490	2600	E	No	0
Bedroom 2 GF	EW-1	3290	2600	E	No	0
Ldry	EW-1	1790	2600	E	No	0
Garage	EW-2	11100	3200	W	No	500
Garage	EW-2	3800	3900	N	No	0
Garage	EW-2	4800	2600	E	No	0
Garage	EW-1	5995	2600	E	No	0
Entry	EW-1	1095	2600	E	No	9000
Entry	EW-1	2300	2600	N	No	1600
Entry	EW-1	5000	2600	W	No	2300
Entry	EW-1	2895	2600	N	No	800
Music GF	EW-1	600	2600	E	No	3800
Music GF	EW-1	5200	2600	S	No	0
Music GF	EW-1	1800	2600	W	No	3700
Bedroom 4 GF	EW-1	3695	2600	S	No	1800
Bedroom 4 GF	EW-1	4295	2600	W	No	0
Night Time 2	EW-1	1890	2600	W	No	0
Bath 1 GF	EW-1	2490	2600	W	No	0
Bedroom 5 GF	EW-1	3895	2600	W	No	0
Bedroom 5 GF	EW-1	3700	2600	N	No	2000
Bedroom 5 GF	EW-1	3895	2600	E	No	2300
Kitchen/Living	EW-3	5195	2700	S	No	1300
Kitchen/Living	EW-3	2295	2700	N	No	5000
Kitchen/Living	EW-1	5000	2700	W	No	5400
Kitchen/Living	EW-3	2900	2700	N	No	1600
Kitchen/Living	EW-3	4800	2700	W	No	400
Kitchen/Living	EW-3	1595	2700	N	No	4000
Kitchen/Living	EW-3	10295	2700	E	No	0
Kitchen/Living	EW-3	1400	2700	S	No	5700
Kitchen/Living	EW-3	4400	2700	E	No	1400
WC	EW-3	2195	2700	N	No	4000
WC	EW-3	1795	2700	E	No	0
Bedroom 1 UF	EW-3	4395	2700	S	No	1300
Bedroom 1 UF	EW-3	4395	2700	W	No	1100
Ensuite 1 UF	EW-3	1100	2700	S	No	5700
Ensuite 1 UF	EW-3	3800	2700	W	No	0
Ensuite 1 UF	EW-3	3100	2700	N	No	3500
Ensuite 1 UF	EW-3	1500	2700	E	No	9000
Void - Landing	EW-4	2800	3000	S	No	700
Void - Landing	EW-1	6400	2200	W	No	2300
Void - Landing	EW-5	5100	900	N	No	600
Void - Landing	EW-5	5000	600	E	No	700

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## Building features continued

Void - Landing	EW-4	2300	600	S	No	700
Void - Landing	EW-5	1400	2600	E	No	3000

## Internal wall type

Wall type	Area (m <sup>2</sup> )	Insulation	Wall wrap or foil
IW-1 - Cavity Brick	64.0	No insulation	No
IW-2 - Cavity wall, direct fix plasterboard, single gap	194.0	No insulation	No
IW-3 - Cavity wall, direct fix plasterboard, single gap	7.0	Bulk Insulation, No Air Gap R2	No

## Floors

Location	Construction	Area (m <sup>2</sup> )	Sub floor ventilation	Added insulation	Covering
Bedroom 1 LG	Concrete Slab on Ground 100mm	11.5	None	Bulk Insulation in Contact with Floor R1	Carpet 10mm
Ensuite LG	Concrete Slab on Ground 100mm	5.8	None	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Rumpus LG	Concrete Slab on Ground 100mm	27.7	None	Bulk Insulation in Contact with Floor R1	Bare
Bedroom 6 LG	Concrete Slab on Ground 100mm	13.9	None	Bulk Insulation in Contact with Floor R1	Carpet 10mm
Ensuite 6 LG	Concrete Slab on Ground 100mm	7.0	None	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Plant and store	Concrete Slab on Ground 100mm	10.4	None	Bulk Insulation in Contact with Floor R1	Bare
Bedroom 3 GF/Bedroom 6 LG	Concrete Above Plasterboard 100mm	10.6		No Insulation	Carpet 10mm
Bedroom 3 GF/Ensuite 6 LG	Concrete Above Plasterboard 100mm	4.3		No Insulation	Carpet 10mm
Bedroom 3 GF	Concrete Slab on Ground 100mm	1.9	None	Bulk Insulation in Contact with Floor R1	Carpet 10mm
Ensuite 3 GF/Ensuite 6 LG	Concrete Above Plasterboard 100mm	2.3		No Insulation	Bare
Ensuite 3 GF	Concrete Slab on Ground 100mm	4.6	None	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Bath 2 GF	Concrete Slab on Ground 100mm	6.4	None	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Bedroom 2 GF	Concrete Slab on Ground 100mm	12.7	None	Bulk Insulation in Contact with Floor R1	Carpet 10mm
Ldry	Concrete Slab on Ground 100mm	4.5	None	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm



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				Floor R1	
Garage	Concrete Slab on Ground 100mm	42.7	None	Bulk Insulation in Contact with Floor R1	Bare
Entry/Rumpus LG	Concrete Above Plasterboard 100mm	7.7		No Insulation	Bare
Entry/Plant and store	Concrete Above Plasterboard 100mm	10.5		No Insulation	Bare
Entry	Concrete Slab on Ground 100mm	29.2	None	Bulk Insulation in Contact with Floor R1	Bare
Music GF/Rumpus LG	Concrete Above Plasterboard 100mm	18.2		No Insulation	Carpet+Rubber Underlay 18mm
Music GF/Bedroom 6 LG	Concrete Above Plasterboard 100mm	1.0		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 4 GF/Bedroom 1 LG	Concrete Above Plasterboard 100mm	5.6		No Insulation	Carpet 10mm
Bedroom 4 GF/Ensuite LG	Concrete Above Plasterboard 100mm	5.9		No Insulation	Carpet 10mm
Bedroom 4 GF/Rumpus LG	Concrete Above Plasterboard 100mm	1.7		No Insulation	Carpet 10mm
Bedroom 4 GF	Concrete Slab on Ground 100mm	3.7	None	Bulk Insulation in Contact with Floor R1	Carpet 10mm
Night Time 2	Concrete Slab on Ground 100mm	5.2	None	Bulk Insulation in Contact with Floor R1	Bare
Bath 1 GF	Concrete Slab on Ground 100mm	5.6	None	Bulk Insulation in Contact with Floor R1	Ceramic Tiles 8mm
Bedroom 5 GF	Concrete Slab on Ground 100mm	14.3	None	Bulk Insulation in Contact with Floor R1	Carpet 10mm
Kitchen/Living /Bedroom 3 GF	Concrete Above Plasterboard 100mm	7.0		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Ensuite 3 GF	Concrete Above Plasterboard 100mm	3.5		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Bath 2 GF	Concrete Above Plasterboard 100mm	6.7		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Bedroom 2 GF	Concrete Above Plasterboard 100mm	13.1		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Ldry	Concrete Above Plasterboard 100mm	4.8		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Garage	Concrete Above Plasterboard 100mm	15.0		Bulk Insulation R3	Cork Tiles or Parquetry 8mm
Kitchen/Living /Entry	Concrete Above Plasterboard 100mm	37.5		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living /Music GF	Concrete Above Plasterboard 100mm	3.1		No Insulation	Cork Tiles or Parquetry 8mm
WC/Garage	Concrete Above Plasterboard 100mm	3.8		Bulk Insulation R3	Ceramic Tiles 8mm
Bedroom 1 UF/Entry	Concrete Above Plasterboard 100mm	7.8		No Insulation	Carpet 10mm
Bedroom 1 UF/Music GF	Concrete Above Plasterboard 100mm	2.6		No Insulation	Carpet 10mm
Bedroom 1 UF/Bedroom 4 GF	Concrete Above Plasterboard 100mm	7.7		No Insulation	Carpet 10mm

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Bedroom 1 UF/Night Time 2	Concrete Above Plasterboard 100mm	0.9	No Insulation	Carpet 10mm
Ensuite 1 UF/Entry	Concrete Above Plasterboard 100mm	3.2	No Insulation	Ceramic Tiles 8mm
Ensuite 1 UF/Night Time 2	Concrete Above Plasterboard 100mm	2.4	No Insulation	Ceramic Tiles 8mm
Ensuite 1 UF/Bath 1 GF	Concrete Above Plasterboard 100mm	4.3	No Insulation	Ceramic Tiles 8mm
Ensuite 1 UF/Bedroom 5 GF	Concrete Above Plasterboard 100mm	1.2	No Insulation	Ceramic Tiles 8mm
Void - Landing/Kitchen/Li ving	Concrete Above Plasterboard 100mm	29.4	No Insulation	Bare

## Ceiling type

Location	Construction	Added insulation	Roof space above
Bedroom 1 LG	Plasterboard	Bulk Insulation R3	Yes
Bedroom 1 LG	Concrete Above Plasterboard	No Insulation	No
Ensuite LG	Concrete Above Plasterboard	No Insulation	No
Rumpus LG	Plasterboard	Bulk Insulation R3	Yes
Rumpus LG	Concrete Above Plasterboard	No Insulation	No
Bedroom 6 LG	Plasterboard	Bulk Insulation R3	Yes
Bedroom 6 LG	Concrete Above Plasterboard	No Insulation	No
Ensuite 6 LG	Concrete Above Plasterboard	No Insulation	No
Plant and store	Concrete Above Plasterboard	No Insulation	No
Bedroom 3 GF	Plasterboard	Bulk Insulation R3	Yes
Bedroom 3 GF	Concrete Above Plasterboard	No Insulation	No
Ensuite 3 GF	Plasterboard	Bulk Insulation R3	Yes
Ensuite 3 GF	Concrete Above Plasterboard	No Insulation	No
Bath 2 GF	Concrete Above Plasterboard	No Insulation	No
Bedroom 2 GF	Concrete Above Plasterboard	No Insulation	No
Ldry	Concrete Above Plasterboard	No Insulation	No
Garage	Plasterboard	No insulation	Yes
Garage	Concrete Above Plasterboard	Bulk Insulation R3	No
Entry	Concrete Above Plasterboard	No Insulation	No
Music GF	Plasterboard	Bulk Insulation R3	Yes
Music GF	Concrete Above Plasterboard	No Insulation	No
Bedroom 4 GF	Plasterboard	Bulk Insulation R3	Yes
Bedroom 4 GF	Concrete Above Plasterboard	No Insulation	No
Night Time 2	Plasterboard	Bulk Insulation R3	Yes
Night Time 2	Concrete Above Plasterboard	No Insulation	No

\* 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)

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Bath 1 GF	Plasterboard	Bulk Insulation R3	Yes
Bath 1 GF	Concrete Above Plasterboard	No Insulation	No
Bedroom 5 GF	Plasterboard	Bulk Insulation R3	Yes
Bedroom 5 GF	Concrete Above Plasterboard	No Insulation	No
Kitchen/Living	Plasterboard	Bulk Insulation R3	Yes
Kitchen/Living	Concrete Above Plasterboard	No Insulation	No
WC	Plasterboard	Bulk Insulation R3	Yes
Bedroom 1 UF	Plasterboard	Bulk Insulation R3	Yes
Ensuite 1 UF	Plasterboard	Bulk Insulation R3	Yes
Void - Landing	Plasterboard	Bulk Insulation R3	Yes

## Ceiling penetrations

Location	Number	Type	Diameter (mm)	Sealed/unsealed
None Present				

## Ceiling fans

Location	Number	Diameter (mm)
None Present		

## Roof type

Construction	Added insulation	Roof colour
Concrete	No Insulation, Only an Air Gap	Medium
Concrete	No Insulation, Only an Air Gap	Medium
Corrugated Iron	No Insulation, Only an Air Gap	Medium
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1	Medium
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1	Medium

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★ Star rating: 5.4



## 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: 1000702S\_02




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: Friday, 22 March 2019

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



Project summary		
Project name	5A Hilltop Crescent, Fairlight_02	
Street address	5A Hilltop Crescent Fairlight 2094	
Local Government Area	Northern Beaches Council	
Plan type and plan number	deposited 5711	
Lot no.	7	
Section no.	-	
Project type	separate dwelling house	
No. of bedrooms	7	
Project score		
Water	 40	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 53	Target 50

Certificate Prepared by
Name / Company Name: Efficient Living Pty Ltd
ABN (if applicable): 82116346082



# Description of project

## Project address

Project name	5A Hilltop Crescent, Fairlight_02
Street address	5A Hilltop Crescent Fairlight 2094
Local Government Area	Northern Beaches Council
Plan type and plan number	Deposited Plan 5711
Lot no.	7
Section no.	-

## Project type

Project type	separate dwelling house
No. of bedrooms	7

## Site details

Site area (m <sup>2</sup> )	591
Roof area (m <sup>2</sup> )	230
Conditioned floor area (m2)	318.0
Unconditioned floor area (m2)	20.0
Total area of garden and lawn (m2)	240

## Assessor details and thermal loads

Assessor number	BDAV/12/1473
Certificate number	0003690138
Climate zone	56
Area adjusted cooling load (MJ/m <sup>2</sup> .year)	21
Area adjusted heating load (MJ/m <sup>2</sup> .year)	40

## Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 53	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 4 star in each toilet in the development.		✓	✓
The applicant must install taps with a minimum rating of 4 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 4 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 150 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>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> </ul>		✓ ✓	✓ ✓
<b>Swimming pool</b>			
The swimming pool must not have a volume greater than 22 kilolitres.	✓	✓	
The swimming pool must be outdoors.	✓	✓	

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	All or part of floor area 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: solar (electric boosted) with a performance of 26 to 30 STCs or better.	✓	✓	✓
<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: ceiling fans; Energy rating: n/a		✓	✓
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: ceiling fans; Energy rating: n/a		✓	✓
<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: wood heater; Energy rating: n/a		✓	✓
The bedrooms must not incorporate any heating system, or any ducting which is designed to accommodate a heating system.		✓	✓
The wood heater must have a compliance plate confirming that it complies with the relevant Australian standards, and must be installed in accordance with the requirements of all applicable regulatory authorities.			✓
<b>Ventilation</b>			
The applicant must install the following exhaust systems in the development:			
At least 1 Bathroom: no mechanical ventilation (ie. natural); Operation control: n/a		✓	✓
Kitchen: no mechanical ventilation (ie. natural); Operation control: n/a		✓	✓
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 8 of the bedrooms / study;		✓	✓
• at least 4 of the living / dining rooms;		✓	✓

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<ul style="list-style-type: none"> <li>the kitchen;</li> <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 8 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): solar (gas boosted)			
The applicant must install a timer for the swimming pool pump in the development.			
<b>Alternative energy</b>			
The applicant must install a photovoltaic system with the capacity to generate at least 1 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 an induction 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.