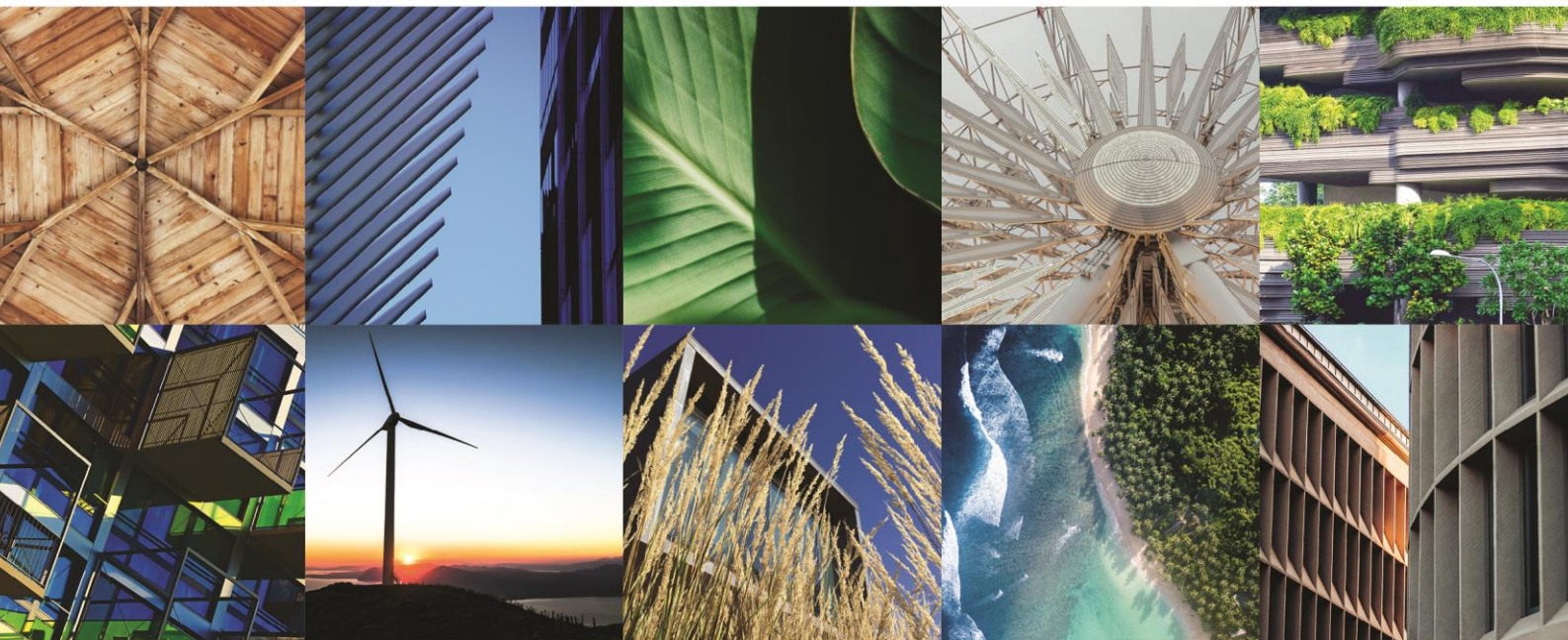




Jared Poole Design Proposed Residential Development

To be built at **52 Hay Street, Collaroy NSW 2097**

Issue	File Ref	Description	Author	Date
A	19-0151	NatHERS and BASIX Assessment	HE	22/03/19
B	19-0286	Update NatHERS and BASIX Assessment	DO	17/04/19

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



Assessor: Haylea Edwards **License Holder:** Tracey Cools
Email: haylea@efficientliving.com.au Accreditation Number: VIC/BDV/12/1473

BASIX Details:

NatHERS Certificate Number: 0003708039-01

BASIX adjusted conditioned area: 374m²

Area adjusted heating load: 35.7MJ/ m²/pa

BASIX adjusted un-conditioned area: 50m²

Area adjusted cooling load: 17.8MJ/ m²/pa

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.

Floors

Concrete slab on ground

Concrete between levels

External Walls

Core filled concrete block

Core filled concrete block framed with R2.0 insulation (insulation only value) and plasterboard lined

Lightweight cladding on frame with R2.0 insulation (insulation only value)

Note: No insulation is required to garage walls

External Colour

Light (SA < 0.75)

Walls within dwellings

Plasterboard on studs – no insulation

Glazing Doors/Windows

Timber frame performance glazing:

Group A – casement windows + hinged glazed doors

U-value: 5.40 (equal to or lower than) SHGC: 0.63 (±10%)

Group B – sliding doors/windows + fixed glazing

U-value: 5.40 (equal to or lower than) SHGC: 0.56 (±10%)

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

Note: Openability modelled as per BASIX Thermal Protocol

Roof

Metal roof with foil backed blanket ($R_{t_u}1.3$ and $R_{t_d}1.3$)

External Colour

Dark ($SA > 0.7$)

Ceilings

Plasterboard ceiling with R3.0 insulation (insulation only value) where roof above

Plasterboard ceiling with R2.0 insulation to garage ceiling where habitable rooms above

Ceiling Penetrations

Ceiling penetrations as per NatHERS certificate

Floor coverings

Carpet to bedrooms, tiles to bathrooms and laundry, timber elsewhere

External Shading

Shading as per stamped documentation

Ventilation

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

Nationwide House Energy Rating Scheme* Certificate



Certificate number: 0003708039-01

Certificate Date: 17 Apr 2019

★ Star rating: 5.9

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: **52 Hay Street**
Suburb: **Collaroy**
State: **NSW** Postcode: **2097**
Type: **New Dwelling** NCC Class: **1A**
NatHERS climate zone: **56**
Lot/DP number: **7/7392** Exposure: **Suburban**

Key construction and insulation materials

(see following pages for details)

Construction: **Tilt up Concrete**
Corrugated Iron
Suspended Concrete Slab
Insulation: **R2.0 wall insulation**
R3.0 ceiling insulation
R2.0 floor insulation
Glazing: **TIM-002-01 W Timber B SG Clear**

Net floor area (m²)

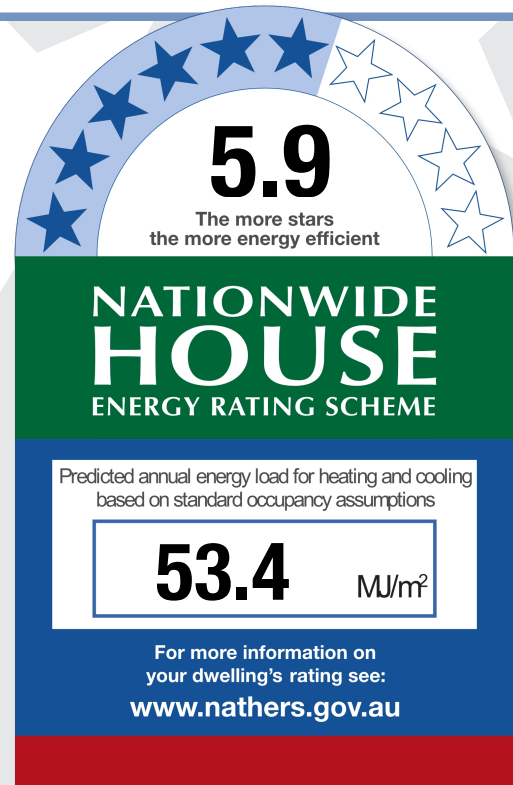
Conditioned: **374.0**
Unconditioned: **274.0**
Garage: **224.0**
TOTAL: **648.0**

Annual thermal performance loads (MJ/m²)

Heating: **35.7**
Cooling: **17.8**
TOTAL: **53.4**

Plan documents

Plan ref/date: **19-0151**
Prepared by: **Jared Poole 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

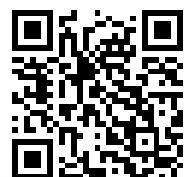
Note on allowable window values:
Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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.



Nationwide House Energy Rating Scheme* Certificate

Certificate number: 0003708039-01

Certificate Date:

17 Apr 2019

★ Star rating:

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Building features

Window type and performance value

Window ID	Window type	U-value	SHGC
TIM-002-01 W	TIM-002-01 W Timber B SG Clear	5.4	0.63
TIM-001-01 W	TIM-001-01 W Timber A SG Clear	5.4	0.56

Window schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Outdoor shade
Kitchen/Living	TIM-002-01 W	n/a	2400	910	E	No Shading
Kitchen/Living	TIM-002-01 W	n/a	2835	10650	W	No Shading
Ldry mud room	TIM-002-01 W	n/a	1800	2410	S	No Shading
Ldry mud room	TIM-002-01 W	n/a	2400	820	W	No Shading
PDR 1	TIM-002-01 W	n/a	900	910	W	No Shading
Lounge	TIM-002-01 W	n/a	1500	810	N	No Shading
Lounge	TIM-002-01 W	n/a	1500	810	N	No Shading
Lounge	TIM-002-01 W	n/a	2170	1700	E	No Shading
Lounge	TIM-001-01 W	n/a	2820	1700	E	Vertical Louvres, Horizontal Blades
Study	TIM-001-01 W	n/a	2820	1700	E	Vertical Louvres, Horizontal Blades
Entry	TIM-002-01 W	n/a	500	1700	E	No Shading
Bedroom 1	TIM-001-01 W	n/a	2320	1700	E	No Shading
Bedroom 1	TIM-001-01 W	n/a	2320	1700	E	No Shading
Dressing b1	TIM-001-01 W	n/a	2320	1700	E	No Shading
Ens b1	TIM-002-01 W	n/a	1800	810	N	No Shading
Ens b1	TIM-001-01 W	n/a	2320	1700	E	No Shading
retreat/stairs	TIM-002-01 W	n/a	1800	1710	N	Vertical Louvres, Horizontal Blades
retreat/stairs	TIM-002-01 W	n/a	1800	1710	S	Vertical Louvres, Horizontal Blades
retreat/stairs	TIM-002-01 W	n/a	800	600	N	No Shading
retreat/stairs	TIM-002-01 W	n/a	800	600	S	No Shading
Bedroom 2	TIM-001-01 W	n/a	2320	1550	W	No Shading
Bedroom 2	TIM-002-01 W	n/a	2320	610	W	No Shading
Bedroom 2	TIM-002-01 W	n/a	2320	610	W	No Shading
Bedroom 3	TIM-001-01 W	n/a	2320	1550	W	No Shading
Bedroom 3	TIM-002-01 W	n/a	2320	610	W	No Shading
Bedroom 3	TIM-002-01 W	n/a	2320	610	W	No Shading
Bedroom 4	TIM-002-01 W	n/a	1800	2400	S	Vertical Louvres, Horizontal Blades
Ensuite bed 4	TIM-002-01 W	n/a	600	1510	S	No Shading
Ensuite b3	TIM-002-01 W	n/a	900	710	S	No Shading
Ens bed 2	TIM-002-01 W	n/a	900	710	N	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	Area (m²)	Orientation	Outdoor shade	Indoor
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Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003708039-01**

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17 Apr 2019

★ Star rating:

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Building features continued

window/skylight
no.

shade/diffuser

None Present

External wall type

ID	Wall type	Insulation	Wall wrap or foil
EW-1	Tilt up Concrete	No insulation	No
EW-2	Tilt up concrete, lined	Bulk Insulation R2	No
EW-3	Weatherboard Cavity Panel Direct Fix	Bulk Insulation R2	No

External wall schedule

Location	ID	Width (mm)	Height (mm)	Orientation	Fixed Shade	Eaves (mm)
Garage 1	EW-1	14100	2900	N	No	0
Garage 1	EW-1	3800	2900	E	No	4200
Garage 1	EW-1	4200	2900	N	No	3800
Garage 1	EW-1	4695	2900	E	No	0
Garage 1	EW-1	11295	2900	S	No	0
Garage 1	EW-1	1100	2900	W	No	0
Garage 1	EW-1	4700	2900	S	No	0
Garage 1	EW-1	5800	2900	W	No	0
Garage 1	EW-1	4700	2900	N	No	0
Garage 1	EW-1	6200	2900	W	No	0
Foyer basement	EW-1	3490	2900	S	No	0
Basement store	EW-1	3795	2900	E	No	0
Basement store	EW-1	1400	2900	S	No	800
Basement store	EW-1	800	2900	E	No	1400
Basement store	EW-1	2095	2900	S	No	0
Kitchen/Living	EW-2	5800	3000	N	No	0
Kitchen/Living	EW-2	1900	3000	E	No	12600
Kitchen/Living	EW-2	795	3000	S	No	1500
Kitchen/Living	EW-2	700	3000	E	No	12600
Kitchen/Living	EW-2	5800	3000	S	No	0
Kitchen/Living	EW-2	12300	3000	W	No	4800
Stairs	EW-2	2695	3000	N	No	1900
Ldry mud room	EW-2	4395	3000	S	No	0
Ldry mud room	EW-2	1500	3000	W	No	3000
Ldry mud room	EW-2	495	3000	S	No	1500
Pantry	EW-2	1690	3000	S	No	1500
PDR 1	EW-2	1895	3000	W	No	12800
PDR 1	EW-2	3295	3000	N	No	0
Lounge	EW-2	4895	3000	N	No	0
Lounge	EW-2	700	3000	E	No	0
Lounge	EW-2	700	3000	N	No	300
Lounge	EW-2	2600	3000	E	No	1000
Lounge	EW-2	700	3000	S	No	9200

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Building features continued

Lounge	EW-2	3300	3000	E	No	1700
Lounge	EW-2	300	3000	S	No	6500
Study	EW-2	300	3000	N	No	9200
Study	EW-2	3900	3000	E	No	1700
Study	EW-2	3495	3000	S	No	0
Entry	EW-2	2590	3000	E	No	2000
Bedroom 1	EW-3	5695	2770	E	No	2100
Bedroom 1	EW-3	5095	2770	S	No	600
Dressing b1	EW-3	3390	2770	E	No	2100
Ens b1	EW-3	700	2770	W	No	1800
Ens b1	EW-3	6500	2770	N	No	600
Ens b1	EW-3	2595	2770	E	No	2100
retreat/stairs	EW-3	3195	2770	N	No	600
retreat/stairs	EW-3	600	2770	W	No	13200
retreat/stairs	EW-3	1195	2770	N	No	1300
retreat/stairs	EW-3	2295	2770	S	No	600
retreat/stairs	EW-3	1800	2770	W	No	900
retreat/stairs	EW-3	3495	2770	S	No	500
Bedroom 2	EW-3	4495	2770	W	No	1600
Bedroom 2	EW-3	4795	2770	N	No	600
Bedroom 3	EW-3	4095	2770	W	No	600
Bedroom 3	EW-3	2100	2770	N	No	5700
Bedroom 3	EW-3	595	2770	W	No	2700
Bedroom 4	EW-3	1500	2770	E	No	600
Bedroom 4	EW-3	3595	2770	S	No	600
Ensuite bed 4	EW-3	1690	2770	S	No	600
Dressing b3	EW-3	2290	2770	S	No	600
Ensuite b3	EW-3	2895	2770	S	No	600
Ensuite b3	EW-3	1795	2770	W	No	600
Ens bed 2	EW-3	3595	2770	N	No	600
Ens bed 2	EW-3	900	2770	E	No	13000

Internal wall type

Wall type	Area (m ²)	Insulation	Wall wrap or foil
IW-1 - Cavity wall, direct fix plasterboard, single gap	431.0	No insulation	No

Floors

Location	Construction	Area (m ²)	Sub floor ventilation	Added insulation	Covering
Garage 1	Concrete Slab on Ground 100mm	224.4	None	No Insulation	Bare
Foyer basement	Concrete Slab on Ground 100mm	9.4	None	No Insulation	Bare
Basement store	Concrete Slab on Ground 100mm	14.6	None	No Insulation	Bare

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Building features continued

Kitchen/Living /Garage 1	Concrete Above Plasterboard 150mm	74.7		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Stairs/Garage 1	Concrete Above Plasterboard 150mm	25.5		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Ldry mud room/Garage 1	Concrete Above Plasterboard 150mm	13.6		Bulk Insulation R2	Ceramic Tiles 8mm
Ldry mud room/Foyer basement	Concrete Above Plasterboard 150mm	7.9		Bulk Insulation R2	Ceramic Tiles 8mm
Pantry/Garage 1	Concrete Above Plasterboard 150mm	7.7		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
PDR 1/Garage 1	Concrete Above Plasterboard 150mm	8.0		Bulk Insulation R2	Ceramic Tiles 8mm
Lounge/Garage 1	Concrete Above Plasterboard 150mm	16.1		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Lounge	Suspended Concrete Slab 150mm	17.5	Totally Open	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Study/Foyer basement	Concrete Above Plasterboard 150mm	0.8		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Study/Basement store	Concrete Above Plasterboard 150mm	12.2		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Study	Suspended Concrete Slab 150mm	1.1	Totally Open	Bulk Insulation in Contact with Floor R2	Cork Tiles or Parquetry 8mm
Entry/Garage 1	Concrete Above Plasterboard 150mm	12.8		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Entry/Foyer basement	Concrete Above Plasterboard 150mm	1.1		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Entry/Basement store	Concrete Above Plasterboard 150mm	2.1		Bulk Insulation R2	Cork Tiles or Parquetry 8mm
Bedroom 1/Ldry mud room	Concrete Above Plasterboard 150mm	4.1		No Insulation	Carpet 10mm
Bedroom 1/Study	Concrete Above Plasterboard 150mm	11.4		No Insulation	Carpet 10mm
Bedroom 1/Entry	Concrete Above Plasterboard 150mm	14.7		No Insulation	Carpet 10mm
Bedroom 1	Suspended Concrete Slab 150mm	0.8	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Dressing b1/Stairs	Concrete Above Plasterboard 150mm	2.1		No Insulation	Carpet 10mm
Dressing b1/Lounge	Concrete Above Plasterboard 150mm	16.0		No Insulation	Carpet 10mm
Ens b1/Stairs	Concrete Above Plasterboard 150mm	0.7		No Insulation	Ceramic Tiles 8mm
Ens b1/PDR 1	Concrete Above Plasterboard 150mm	4.1		No Insulation	Ceramic Tiles 8mm
Ens b1/Lounge	Concrete Above Plasterboard 150mm	12.4		No Insulation	Ceramic Tiles 8mm
retreat/stairs/Kitchen/Living	Concrete Above Plasterboard 150mm	2.9		No Insulation	Cork Tiles or Parquetry 8mm
retreat/stairs/Stairs	Concrete Above Plasterboard 150mm	23.0		No Insulation	Cork Tiles or Parquetry 8mm
retreat/stairs/Ldry mud room	Concrete Above Plasterboard 150mm	12.7		No Insulation	Cork Tiles or Parquetry 8mm
retreat/stairs/Pantry		6.1		No Insulation	

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

Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003708039-01**

Certificate Date:

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★ Star rating:

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Building features continued

	Concrete Above Plasterboard 150mm				Cork Tiles or Parquetry 8mm
retreat/stairs/PDR 1	Concrete Above Plasterboard 150mm	0.7		No Insulation	Cork Tiles or Parquetry 8mm
retreat/stairs/Entry	Concrete Above Plasterboard 150mm	1.6		No Insulation	Cork Tiles or Parquetry 8mm
Hall 1st floor/Kitchen/Living	Concrete Above Plasterboard 150mm	6.9		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 2/Kitchen/Living	Concrete Above Plasterboard 150mm	10.5		No Insulation	Carpet 10mm
Bedroom 2	Suspended Concrete Slab 150mm	11.4	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Bedroom 3/Kitchen/Living	Concrete Above Plasterboard 150mm	1.6		No Insulation	Carpet 10mm
Bedroom 3	Suspended Concrete Slab 150mm	17.4	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Bedroom 4/Kitchen/Living	Concrete Above Plasterboard 150mm	16.4		No Insulation	Carpet 10mm
Dressing b4/Kitchen/Living	Concrete Above Plasterboard 150mm	3.9		No Insulation	Carpet 10mm
Dressing b4	Suspended Concrete Slab 150mm	1.8	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Ensuite bed 4/Kitchen/Living	Concrete Above Plasterboard 150mm	4.4		No Insulation	Ceramic Tiles 8mm
Dressing b3/Kitchen/Living	Concrete Above Plasterboard 150mm	1.3		No Insulation	Carpet 10mm
Dressing b3	Suspended Concrete Slab 150mm	4.0	Totally Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Ensuite b3	Suspended Concrete Slab 150mm	5.0	Totally Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Ens bed 2/Kitchen/Living	Concrete Above Plasterboard 150mm	5.8		No Insulation	Ceramic Tiles 8mm
Dressing b2/Kitchen/Living	Concrete Above Plasterboard 150mm	6.0		No Insulation	Carpet 10mm
Linen/Kitchen/Living	Concrete Above Plasterboard 150mm	3.6		No Insulation	Cork Tiles or Parquetry 8mm

Ceiling type

Location	Construction	Added insulation	Roof space above
Garage 1	Plasterboard	Bulk Insulation R3	Yes
Garage 1	Concrete Above Plasterboard	Bulk Insulation R2	No
Foyer basement	Concrete Above Plasterboard	Bulk Insulation R2	No
Basement store	Concrete Above Plasterboard	Bulk Insulation R2	No
Kitchen/Living	Plasterboard	Bulk Insulation R3	Yes

Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003708039-01**

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17 Apr 2019

★ Star rating:

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Building features continued

Kitchen/Living	Concrete Above Plasterboard	No Insulation	No
Stairs	Concrete Above Plasterboard	No Insulation	No
Ldry mud room	Plasterboard	Bulk Insulation R3	Yes
Ldry mud room	Concrete Above Plasterboard	No Insulation	No
Pantry	Plasterboard	Bulk Insulation R3	Yes
Pantry	Concrete Above Plasterboard	No Insulation	No
PDR 1	Plasterboard	Bulk Insulation R3	Yes
PDR 1	Concrete Above Plasterboard	No Insulation	No
Lounge	Plasterboard	Bulk Insulation R3	Yes
Lounge	Concrete Above Plasterboard	No Insulation	No
Study	Plasterboard	Bulk Insulation R3	Yes
Study	Concrete Above Plasterboard	No Insulation	No
Entry	Concrete Above Plasterboard	No Insulation	No
Bedroom 1	Plasterboard	Bulk Insulation R3	Yes
Dressing b1	Plasterboard	Bulk Insulation R3	Yes
Ens b1	Plasterboard	Bulk Insulation R3	Yes
retreat/stairs	Plasterboard	Bulk Insulation R3	Yes
Hall 1st floor	Plasterboard	Bulk Insulation R3	Yes
Bedroom 2	Plasterboard	Bulk Insulation R3	Yes
Bedroom 3	Plasterboard	Bulk Insulation R3	Yes
Bedroom 4	Plasterboard	Bulk Insulation R3	Yes
Dressing b4	Plasterboard	Bulk Insulation R3	Yes
Ensuite bed 4	Plasterboard	Bulk Insulation R3	Yes
Dressing b3	Plasterboard	Bulk Insulation R3	Yes
Ensuite b3	Plasterboard	Bulk Insulation R3	Yes
Ens bed 2	Plasterboard	Bulk Insulation R3	Yes
Dressing b2	Plasterboard	Bulk Insulation R3	Yes
Linen	Plasterboard	Bulk Insulation R3	Yes

Ceiling penetrations

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

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

Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003708039-01**

Certificate Date:

17 Apr 2019

★ Star rating:

5.9



Building features continued

Ceiling fans

Location	Number	Diameter (mm)
None Present		

Roof type

Construction	Added insulation	Roof colour
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	Dark
Corrugated Iron	Bulk, Reflective Side Down, No Air Gap Above R1.3	Medium

Nationwide House Energy Rating Scheme* Certificate

Certificate number: 0003708039-01

Certificate Date: 17 Apr 2019

★ Star rating: 5.9



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

For more information on energy efficient design and insulation visit www.yourhome.gov.au

BASIX[®]Certificate

Building Sustainability Index www.basix.nsw.gov.au

Single Dwelling

Certificate number: 1002972S_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

Secretary

Date of issue: Wednesday, 17 April 2019

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



Project summary		
Project name	52 Hay Street, Collaroy_02	
Street address	52 Hay Street Collaroy 2097	
Local Government Area	Northern Beaches Council	
Plan type and plan number	deposited 7392	
Lot no.	7	
Section no.	-	
Project type	separate dwelling house	
No. of bedrooms	4	
Project score		
Water	 44	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 50	Target 50

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

Description of project

Project address

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Site details

Site area (m ²)	697
Roof area (m ²)	353
Conditioned floor area (m2)	374.1
Unconditioned floor area (m2)	48.7
Total area of garden and lawn (m2)	218

Assessor details and thermal loads

Assessor number	BDAV/12/1473
Certificate number	0003708039-01
Climate zone	56
Area adjusted cooling load (MJ/m ² .year)	18
Area adjusted heating load (MJ/m ² .year)	36

Project score

Water	 44	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 50	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
Fixtures			
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 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.		✓	
Alternative water			
Rainwater tank			
The applicant must install a rainwater tank of at least 3500 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 300 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: - all toilets in the development - the cold water tap that supplies each clothes washer in the development - 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.)		✓ ✓ ✓	✓ ✓ ✓
Swimming pool			
The swimming pool must not have a volume greater than 47 kilolitres.	✓	✓	
The swimming pool must have a pool cover.		✓	

Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
The swimming pool must be outdoors.	✓	✓	
Outdoor Spa			
The spa must not have a volume greater than 2.5 kilolitres.	✓	✓	
The spa must have a spa cover.		✓	

Thermal Comfort Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Simulation Method			
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	24.0 square metres
floor - suspended floor/open subfloor	61.0 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
Hot water			
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 6 stars.	✓	✓	✓
Cooling system			
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 3.0 - 3.5		✓	✓
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 3.0 - 3.5		✓	✓
The cooling system must provide for day/night zoning between living areas and bedrooms.		✓	✓
Heating system			
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 3.5 - 4.0		✓	✓
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 3.5 - 4.0		✓	✓
The heating system must provide for day/night zoning between living areas and bedrooms.		✓	✓
Ventilation			
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		✓	✓
Artificial lighting			
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;		✓	✓

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
• at least 3 of the living / dining rooms; • the kitchen; • all bathrooms/toilets; • the laundry; • all hallways;		    	    
Natural lighting			
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 5 bathroom(s)/toilet(s) in the development for natural lighting.			
Swimming pool			
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): gas			
The applicant must install a timer for the swimming pool pump in the development.			
Outdoor spa			
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): gas			
The applicant must install a timer for the spa pump in the development.			
Alternative energy			
The applicant must install a photovoltaic system with the capacity to generate at least 2.5 peak kilowatts of electricity as part of the development. The applicant must connect this system to the development's electrical system.			
Other			
The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling.			

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
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.