



Simone & Brendan Waights Proposed Residential Development

To be built at **18 Alexander Street, Collaroy, 2097 NSW**

Issue	File Ref	Description	Author	Date
A	19-0136	NatHERS and BASIX Assessment	NM	06/03/19

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Simone & Brendan Waights. 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: Niall Madden
Email: niall@efficientliving.com.au

License Holder: Tracey Cools
Accreditation Number: VIC/BDV/12/1473

BASIX Details:

Lot 9

NatHERS Certificate Number: 0003662590

BASIX adjusted conditioned area: 59 m²

BASIX adjusted un-conditioned area: 0 m²

Area adjusted heating load: 38.6 MJ/ m²/pa

Area adjusted cooling load: 26 MJ/ m²/pa

Lot 8

NatHERS Certificate Number: 0003662690

Main:

BASIX adjusted conditioned area: 311 m²

BASIX adjusted un-conditioned area: 6 m²

Area adjusted heating load: 40.8 MJ/ m²/pa

Area adjusted cooling load: 26.2 MJ/ m²/pa

Flat:

BASIX adjusted conditioned area: 61 m²

BASIX adjusted un-conditioned area: 0 m²

Area adjusted heating load: 16.0 MJ/ m²/pa

Area adjusted cooling load: 24.2 MJ/ 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 no insulation required to basement level floors

Suspended concrete with a minimum R2.5 insulation (insulation only value) to ground level of both dwellings in Lot 8

Timber between ground and first level, no insulation required

Suspended timber floor with R2.5 (insulation only value) to Lot 9

External Walls

Lightweight cladding on framed walls with R2.5 insulation (insulation only value)

Lightweight cladding on framed walls with R2.7 insulation to Main House Lot 8 (insulation only value)

Concrete Block walls no insulation required to garage levels

External Colour

Default colour modelled

Walls within dwellings

Plasterboard on studs – R2.5 to walls shared with garage and sub floor, and to unconditioned zones (bathrooms).

Glazing Doors/Windows

Aluminium framed performance glazing:

Group A – awning + bifold + casement windows + hinged glazed doors

U-value: 4.80 (equal to or lower than) SHGC: 0.51 (±10%)

Group B – sliding doors/windows + fixed glazing + louvred windows

U-value: 4.80 (equal to or lower than) SHGC: 0.59 (±10%)

Aluminium framed double clear glazing in Main dwelling Lot 8 to glazing in teenagers wing, teenagers retreat, library and rumpus excluding louvre windows:

Group A – awning + bifold + casement windows + hinged glazed doors

U-value: 3.10 (equal to or lower than) SHGC: 0.49 (±10%)

Group B – sliding doors/windows + fixed glazing + louvred windows

U-value: 3.10 (equal to or lower than) SHGC: 0.49 (±10%)

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

Note: Openability modelled as per BASIX Thermal Protocol – 4.14.2 and NatHERS Technical Note 1.2 – 10.11 with regards to restricted openings

Skylights

None

Roof

Metal roof with foil backed blanket ($R_{u1.3}$ and $R_{d1.3}$)

External Colour

Light ($SA < 0.75$)

Ceilings

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

Plasterboard ceiling with R2.5 insulation to Garage ceiling where habitable rooms above

Plasterboard ceiling with R3.0 insulation (insulation only value) where balconies/trafficable areas above

Ceiling Penetrations

Loss of ceiling insulation has been accounted for in accordance with BASIX Thermal Protocol 4.13.1 and NatHERS Technical Note 1.2

Assumed sealed LED downlights, one every 5m²

Floor coverings

Default floor coverings modelled as per NatHERS Technical Note 1.2 – 10.5

External Shading

External Shading added to Main dwelling Lot 8 East Facing glazing in teenage retreat, teenage wing and teenage bedroom

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: **0003662590**

Certificate Date: **05 Mar 2019**

★ Star rating: **5.1**

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**
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: **18 Alexander Street**
Suburb: **Collaroy**
State: **NSW** Postcode: **2097**
Type: **New Dwelling** NCC Class: **1A**
NatHERS climate zone: **56**
Lot/DP number: **9/6984** Exposure: **Suburban**

Key construction and insulation materials

(see following pages for details)

Construction: **Fibro Cavity Panel on Battens**
Corrugated Iron
Suspended Timber Floor
Insulation: **R2.5 wall insulation**
R3.0 ceiling insulation
R2.5 floor insulation
Glazing: **ALM-004-01 A Aluminium B DG Air Fill**
Clear-Clear

Net floor area (m²)

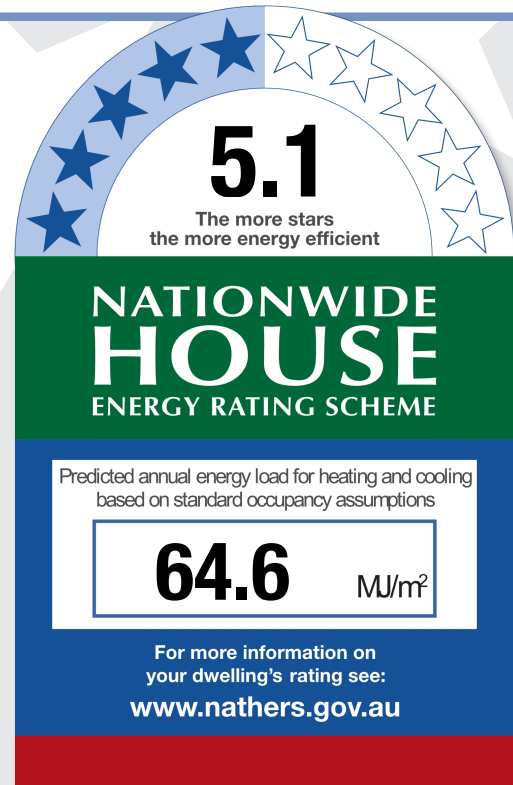
Conditioned: **59.0**
Unconditioned: **0.0**
Garage: **0.0**
TOTAL: **59.0**

Annual thermal performance loads (MJ/m²)

Heating: **38.6**
Cooling: **26.0**
TOTAL: **64.6**

Plan documents

Plan ref/date: **19-0136**
Prepared by: **Walsh Architects**



Ceiling penetrations

(see following pages for details)

Sealed: **14**
Unsealed: **0**
TOTAL:** **14**

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: **Halogen**

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: **0003662590**

Certificate Date:

05 Mar 2019

★ Star rating:

5.1



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
Kitchen/Living	ALM-004-01 A	n/a	2200	1100	N	No Shading
Kitchen/Living	ALM-004-01 A	n/a	3100	950	N	No Shading
Kitchen/Living	ALM-004-01 A	n/a	3370	950	N	No Shading
Kitchen/Living	ALM-004-01 A	n/a	3670	950	N	No Shading
Bedroom 1	ALM-004-01 A	n/a	1410	1800	S	No Shading
Bedroom 1	ALM-004-01 A	n/a	1100	3000	W	No Shading
Study	ALM-004-01 A	n/a	1410	1800	S	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 (m ²)	Orientation	Outdoor shade	Indoor shade/diffuser
None Present						

External wall type

ID	Wall type	Insulation	Wall wrap or foil
EW-1	Fibro Cavity Panel on Battens	Bulk Insulation R2.5	No
EW-2	Weatherboard Cavity Panel Direct Fix	Bulk Insulation R2.5	No

External wall schedule

Location	ID	Width (mm)	Height (mm)	Orientation	Fixed Shade	Eaves (mm)
Kitchen/Living	EW-1	4395	3850	E	No	950
Kitchen/Living	EW-2	3895	2400	W	No	650
Kitchen/Living	EW-2	2850	2400	N	No	300
Kitchen/Living	EW-2	600	2400	E	No	7300
Kitchen/Living	EW-1	2700	3100	N	No	900
Kitchen/Living	EW-1	1800	3380	N	No	900
Kitchen/Living	EW-1	1850	3700	N	No	900
Bedroom 1	EW-1	3795	2400	S	No	900
Bedroom 1	EW-2	3095	2400	W	No	650
Study	EW-1	2690	2700	S	No	900
Bath	EW-1	1995	3100	E	No	950
Bath	EW-1	2695	3100	S	No	900

Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003662590**

Certificate Date:

05 Mar 2019

★ Star rating:

5.1

Building features continued

Internal wall type

Wall type	Area (m²)	Insulation	Wall wrap or foil
IW-1 - Cavity wall, direct fix plasterboard, single gap	37.0	No insulation	No

Floors

Location	Construction	Area (m²)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	Suspended Timber Floor 19mm	37.5	Very Open	Bulk Insulation in Contact with Floor R2.5	60/40 Carpet 10mm/Ceramic
Bedroom 1	Suspended Timber Floor 19mm	11.5	Very Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
Study	Suspended Timber Floor 19mm	5.1	Very Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
Bath	Suspended Timber Floor 19mm	5.2	Very Open	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm

Ceiling type

Location	Construction	Added insulation	Roof space above
Kitchen/Living	Plasterboard	Bulk Insulation R3	No
Bedroom 1	Plasterboard	Bulk Insulation R3	No
Study	Plasterboard	Bulk Insulation R3	No
Bath	Plasterboard	Bulk Insulation R3	No

Ceiling penetrations

Location	Number	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	8	Downlights - Halogen	450	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 1	2	Downlights - LED	150	Sealed
Study	1	Downlights - LED	150	Sealed
Bath	1	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Number	Diameter (mm)
None Present		

Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003662590**

Certificate Date:

05 Mar 2019

★ Star rating:

5.1



Building features continued

Roof type

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

Nationwide House Energy Rating Scheme* Certificate

Certificate number: 0003662590

Certificate Date: 05 Mar 2019

★ Star rating: 5.1



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

Nationwide House Energy Rating Scheme* — Multiple-dwelling summary



Certificate number: **0003662690**

Certificate Date: **05 Mar 2019**

★ Average Star rating: **5.9**

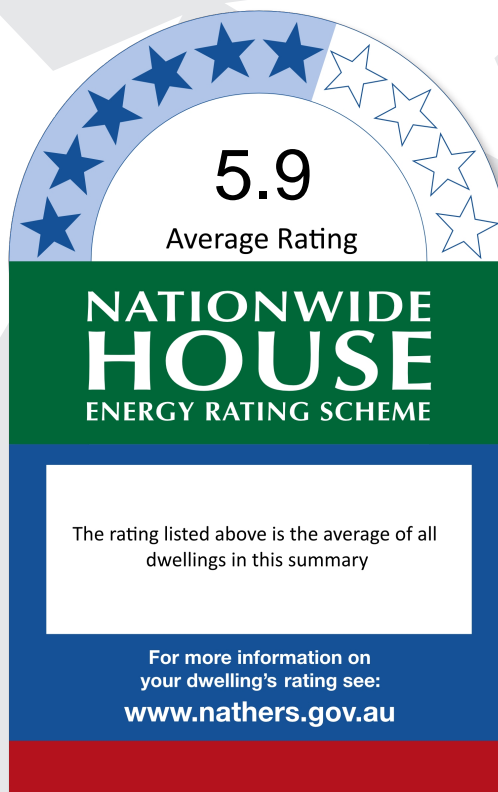
Assessor details

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

Dwelling details

Street: **18 Alexander Street**
Suburb: **Collaroy**
State: **NSW**
Postcode: **2097**

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



Summary of all dwellings

Certificate Details

Certificate number	Dwelling/Unit number	Heating load	Cooling load	Total load	Star Rating
0003662608	a	40.8	26.2	67.0	4.9
0003662616	b	16.0	24.2	40.2	6.9

Nationwide House Energy Rating Scheme* Certificate



Certificate number: **0003662616**

Certificate Date: **05 Mar 2019**

★ Star rating: **6.9**

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Assessor details

Accreditation number: **VIC/BDAV/12/1473**
Name: **Tracey Cools**
Organisation: **Efficient Living**
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: **Unit b, 18 Alexander Street**
Suburb: **Collaroy**
State: **NSW** Postcode: **2097**
Type: **New Dwelling** NCC Class: **1A**
NatHERS climate zone: **56**
Lot/DP number: **8/6984** Exposure: **Suburban**

Key construction and insulation materials

(see following pages for details)

Construction: **Fibro Cavity Panel on Battens**
Plasterboard
Suspended Concrete Slab
Insulation: **R2.5 wall insulation**
R3.0 ceiling insulation
R2.5 floor insulation
Glazing: **ALM-004-01 A Aluminium B DG Air Fill**
Clear-Clear

Net floor area (m²)

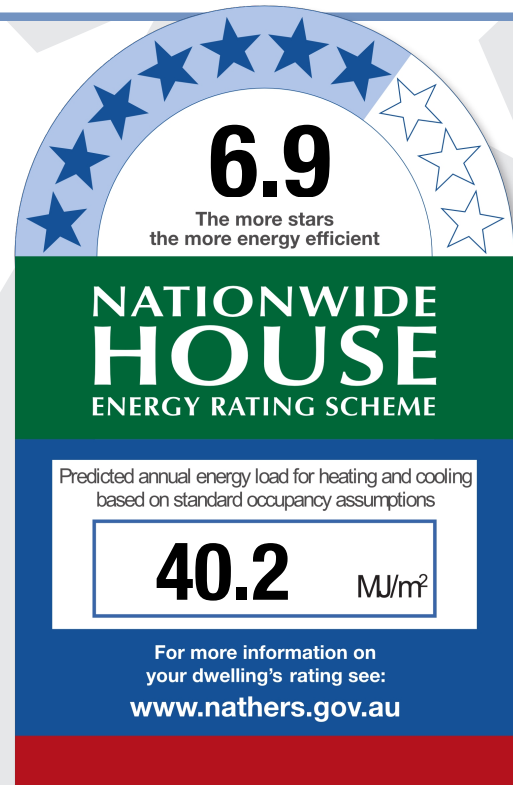
Conditioned: **61.0**
Unconditioned: **0.0**
Garage: **0.0**
TOTAL: **61.0**

Annual thermal performance loads (MJ/m²)

Heating: **16.0**
Cooling: **24.2**
TOTAL: **40.2**

Plan documents

Plan ref/date: **19-0136**
Prepared by: **Walsh Architects**



Ceiling penetrations

(see following pages for details)

Sealed: **14**
Unsealed: **0**
TOTAL:** **14**

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: **Halogen**

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.

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Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003662616**

Certificate Date:

05 Mar 2019

★ Star rating:

6.9



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
Kitchen/Living	ALM-004-01 A	n/a	2400	1800	N	No Shading
Kitchen/Living	ALM-004-01 A	n/a	2400	1800	N	No Shading
Kitchen/Living	ALM-004-01 A	n/a	2200	1100	N	No Shading
Bedroom 1	ALM-004-01 A	n/a	1500	3000	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	Fibro Cavity Panel on Battens	Bulk Insulation R2.5	No

External wall schedule

Location	ID	Width (mm)	Height (mm)	Orientation	Fixed Shade	Eaves (mm)
Kitchen/Living	EW-1	5900	2700	N	No	0
Kitchen/Living	EW-1	600	2700	E	No	4150
Kitchen/Living	EW-1	3300	2700	N	No	600
Kitchen/Living	EW-1	3295	2700	E	No	850
Kitchen/Living	EW-1	4995	2700	W	No	0
Bedroom 1	EW-1	3095	2700	E	No	850
Bedroom 1	EW-1	1250	2700	S	No	450
Study	EW-1	995	2700	S	No	0
Bath	EW-1	2695	2700	S	No	0
Bath	EW-1	1995	2700	W	No	0

Internal wall type

Wall type	Area (m²)	Insulation	Wall wrap or foil
IW-1 - Cavity wall, direct fix plasterboard, single gap	39.0	No insulation	No
IW-2 - Double stud with plasterboard	11.0	No Insulation	No

Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003662616**

Certificate Date:

05 Mar 2019

★ Star rating:

6.9

Building features continued

Floors

Location	Construction	Area (m²)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	Suspended Concrete Slab 150mm	39.4	Very Open	Bulk Insulation in Contact with Floor R2.5	60/40 Carpet 10mm/Ceramic
Bedroom 1	Suspended Concrete Slab 150mm	11.5	Very Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
Study	Suspended Concrete Slab 150mm	5.1	Very Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
Bath	Suspended Concrete Slab 150mm	5.2	Very Open	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm

Ceiling type

Location	Construction	Added insulation	Roof space above
Kitchen/Living	Plasterboard	Bulk Insulation R3	No
Bedroom 1	Plasterboard	Bulk Insulation R3	No
Study	Plasterboard	Bulk Insulation R3	No
Bath	Plasterboard	Bulk Insulation R3	No

Ceiling penetrations

Location	Number	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	8	Downlights - Halogen	450	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Bedroom 1	2	Downlights - LED	150	Sealed
Study	1	Downlights - LED	150	Sealed
Bath	1	Downlights - LED	150	Sealed
Bath	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Number	Diameter (mm)
None Present		

Roof type

Construction	Added insulation	Roof colour
Corrugated Iron	Bulk, Reflective Side Down, No	Medium

Nationwide House Energy Rating Scheme* Certificate

Certificate number: **0003662616**

Certificate Date:

05 Mar 2019

★ Star rating:

6.9



Building features continued

Air Gap Above
R1.3

Nationwide House Energy Rating Scheme* Certificate

Certificate number: 0003662616

Certificate Date: 05 Mar 2019

★ Star rating: 6.9



Additional information

All windows not marked in elevations modelled as 45% operable sliding windows. To be updated if construction plans change.

Explanatory notes

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Nationwide House Energy Rating Scheme* Certificate



Certificate number: **0003662608**

Certificate Date: **05 Mar 2019**

★ Star rating: **4.9**

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Assessor details

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Name: **Tracey Cools**
Organisation: **Efficient Living**
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: **Unit a, 18 Alexander Street**
Suburb: **Collaroy**
State: **NSW** Postcode: **2097**
Type: **New Dwelling** NCC Class: **1A**
NatHERS climate zone: **56**
Lot/DP number: **8/6984** Exposure: **Suburban**

Key construction and insulation materials

(see following pages for details)

Construction: **Fibro Cavity Panel on Battens**
Roof Tiles
Suspended Timber Floor
Insulation: **R2.7 wall insulation**
R3.0 ceiling insulation
R2.5 floor insulation
Glazing: **ALM-004-01 A Aluminium B DG Air Fill**
Clear-Clear

Net floor area (m²)

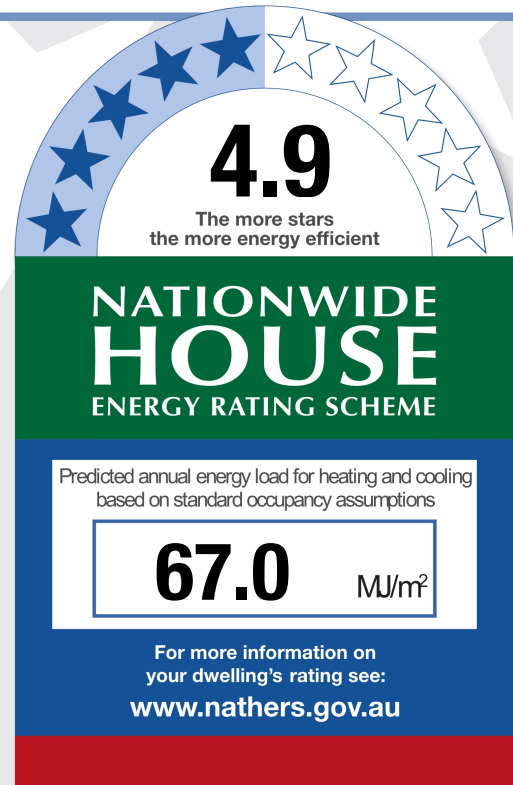
Conditioned: **311.0**
Unconditioned: **107.0**
Garage: **101.0**
TOTAL: **418.0**

Annual thermal performance loads (MJ/m²)

Heating: **40.8**
Cooling: **26.2**
TOTAL: **67.0**

Plan documents

Plan ref/date: **19-0136**
Prepared by: **Walsh Architects**



Ceiling penetrations

(see following pages for details)

Sealed: **66**
Unsealed: **0**
TOTAL:** **66**

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

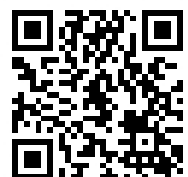
Note on allowable window values:
Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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

Certificate number: **0003662608**

Certificate Date:

05 Mar 2019

★ Star rating:

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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
ALM-003-01 A	ALM-003-01 A Aluminium A DG Air Fill Clear-Clear	4.8	0.51
ATB-004-03 B	ATB-004-03 B AI Thermally Broken B DG Air Fill High Solar Gain low-E -Clear	3.1	0.49

Window schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Outdoor shade
Kitchen/Living	ALM-004-01 A	n/a	900	1600	E	No Shading
Kitchen/Living	ALM-004-01 A	n/a	900	1600	E	No Shading
Kitchen/Living	ALM-004-01 A	n/a	900	1600	E	No Shading
Kitchen/Living	ALM-004-01 A	n/a	1250	1400	N	No Shading
Kitchen/Living	ALM-003-01 A	n/a	2400	2000	W	No Shading
Kitchen/Living	ALM-004-01 A	n/a	2400	1200	N	No Shading
Library/Rumpus	ATB-004-03 B	n/a	2100	4100	S	Vertical Louvres, Horizontal Blades
Library/Rumpus	ATB-004-03 B	n/a	2100	4100	S	Vertical Louvres, Horizontal Blades
Teenagers Wing	ATB-004-03 B	n/a	2500	1100	W	No Shading
Teenagers Wing	ATB-004-03 B	n/a	2500	1100	W	No Shading
Teenagers Wing	ATB-004-03 B	n/a	2500	1100	W	No Shading
Teenagers Wing	ATB-004-03 B	n/a	1100	2600	E	Vertical Louvres, Horizontal Blades
Teen Room	ALM-004-01 A	n/a	1100	3400	E	Vertical Louvres, Horizontal Blades
Teenage Retreat	ATB-004-03 B	n/a	2400	1200	E	Vertical Louvres, Horizontal Blades
Teenage Retreat	ATB-004-03 B	n/a	2400	1200	E	Vertical Louvres, Horizontal Blades
Teenage Retreat	ATB-004-03 B	n/a	2400	1200	E	Vertical Louvres, Horizontal Blades
Teenage Retreat	ALM-004-01 A	n/a	1700	1800	N	No Shading
Teenage Retreat	ALM-004-01 A	n/a	1700	1800	N	No Shading
Teenage Retreat	ATB-004-03 B	n/a	1000	1800	N	No Shading
Teenage Retreat	ATB-004-03 B	n/a	1000	1800	N	No Shading
Bedroom 2	ALM-004-01 A	n/a	900	1500	W	No Shading
Bedroom 2	ALM-004-01 A	n/a	2400	2350	S	No Shading
Bedroom 2	ALM-003-01 A	n/a	10	10	E	No Shading
Master Bed	ALM-004-01 A	n/a	900	1500	E	No Shading
Master Bed	ALM-004-01 A	n/a	2400	2350	S	No Shading
WIR M	ALM-004-01 A	n/a	900	1000	E	No Shading
Ensuite	ALM-004-01 A	n/a	900	1300	E	No Shading
Corridor	ALM-003-01 A	n/a	2400	900	N	No Shading
Corridor	ALM-003-01 A	n/a	10	10	E	No Shading
WIR	ALM-004-01 A	n/a	2400	1000	E	No Shading
Bed 4	ALM-004-01 A	n/a	2400	2350	N	No Shading
Bed 4	ALM-004-01 A	n/a	2400	1200	E	No Shading
Bed 4	ALM-004-01 A	n/a	2400	1200	E	No Shading
Bath	ALM-004-01 A	n/a	900	1700	W	No Shading
Bedroom 3	ALM-004-01 A	n/a	900	1500	W	No Shading

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Building features continued

Bedroom 3	ALM-004-01 A	n/a	2400	2350	N	No Shading
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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	Concrete Block	No insulation	No
EW-2	Fibro Cavity Panel on Battens	Bulk Insulation R2.7	No
EW-3	Fibro Cavity Panel on Battens	Bulk Insulation R2.5	No

External wall schedule

Location	ID	Width (mm)	Height (mm)	Orientation	Fixed Shade	Eaves (mm)
Garage	EW-1	8450	2300	N	No	10000
Garage	EW-1	6995	2300	E	No	0
Garage	EW-1	6995	2300	W	No	0
Subfloor Store	EW-1	5995	2300	E	No	0
Subfloor Store	EW-1	8450	2300	S	No	2900
Subfloor Store	EW-1	5995	2300	W	No	0
Kitchen/Living	EW-2	12295	2700	E	No	0
Kitchen/Living	EW-2	3595	2700	W	No	0
Kitchen/Living	EW-2	3100	2700	N	No	0
Kitchen/Living	EW-2	3395	2700	W	No	3100
Kitchen/Living	EW-2	1550	2700	N	No	0
Library/Rumpus	EW-2	3595	2700	E	No	0
Library/Rumpus	EW-2	8450	2700	S	No	1400
Library/Rumpus	EW-2	3595	2700	W	No	0
LDRY/PWDR	EW-2	3090	2700	W	No	0
Pantry	EW-2	2190	2700	W	No	0
Teenagers Wing	EW-2	9995	2700	W	No	1700
Teenagers Wing	EW-2	1095	2700	N	No	6900
Teenagers Wing	EW-2	4340	2700	E	No	0
Ens	EW-2	1540	2700	E	No	0
Teen Room	EW-2	2695	2700	N	No	0
Teen Room	EW-2	4095	2700	E	No	0
Teenage Retreat	EW-3	6900	2700	E	No	0
Teenage Retreat	EW-2	1000	2700	S	No	10000
Teenage Retreat	EW-2	1350	2700	E	No	0

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Building features continued

Teenage Retreat	EW-2	1050	2700	S	No	8650
Teenage Retreat	EW-2	1350	2700	W	No	0
Teenage Retreat	EW-2	3750	2700	S	No	400
Teenage Retreat	EW-2	6900	2700	W	No	0
Teenage Retreat	EW-2	5800	2700	N	No	0
Bedroom 2	EW-2	3995	2800	W	No	700
Bedroom 2	EW-2	4295	3200	S	No	1700
Master Bed	EW-2	3995	2700	E	No	750
Master Bed	EW-2	4145	2800	S	No	1700
WIR M	EW-2	2240	2700	E	No	750
Ensuite	EW-2	1890	2700	E	No	750
Corridor	EW-2	1040	3300	N	No	1500
WIR	EW-2	2390	2700	E	No	750
Bed 4	EW-2	3745	2700	N	No	1500
Bed 4	EW-2	3845	2700	E	No	750
Ensuite 2	EW-2	2240	2800	W	No	700
Bath	EW-2	3340	2800	W	No	700
Bedroom 3	EW-2	4795	2800	W	No	700
Bedroom 3	EW-2	3645	3200	N	No	1500

Internal wall type

Wall type	Area (m ²)	Insulation	Wall wrap or foil
IW-1 - Cavity wall, direct fix plasterboard, single gap	222.0	No insulation	No
IW-2 - Cavity wall, direct fix plasterboard, single gap	49.0	Bulk Insulation, No Air Gap R2.5	No

Floors

Location	Construction	Area (m ²)	Sub floor ventilation	Added insulation	Covering
Garage	Concrete Slab on Ground 150mm	58.8	None	No Insulation	Bare
Entry	Concrete Slab on Ground 150mm	7.7	None	No Insulation	Carpet+Rubber Underlay 18mm
Subfloor Store	Concrete Slab on Ground 150mm	41.8	None	No Insulation	Bare
Kitchen/Living/Garage	Concrete Above Plasterboard 19mm	48.1		Bulk Insulation R2.5	80/20 Carpet 10mm/Ceramic
Kitchen/Living/Entry	Concrete Above Plasterboard 19mm	8.1		No Insulation	80/20 Carpet 10mm/Ceramic
Kitchen/Living/Subfloor Store	Concrete Above Plasterboard 19mm	25.2		Bulk Insulation R2.5	80/20 Carpet 10mm/Ceramic
Library/Rumpus/Subfloor Store	Concrete Above Plasterboard 150mm	5.8		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Library/Rumpus	Suspended Concrete Slab 150mm	24.2	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
LDRY/PWDR/Subfl	Concrete Above Plasterboard	6.2		Bulk Insulation	Ceramic Tiles

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Building features continued

oor Store	19mm			R2.5	8mm
Pantry/Subfloor Store	Concrete Above Plasterboard 19mm	4.3		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Teenagers Wing	Suspended Concrete Slab 150mm	22.2	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
Ens	Suspended Concrete Slab 150mm	3.9	Totally Open	Bulk Insulation in Contact with Floor R2.5	Ceramic Tiles 8mm
Teen Room	Suspended Concrete Slab 150mm	10.8	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm
Teenage Retreat/Teenagers Wing	Concrete Above Plasterboard 150mm	1.4		No Insulation	Carpet+Rubber Underlay 18mm
Teenage Retreat	Concrete Slab, Unit Below 150mm	40.0	None	No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Kitchen/Living	Timber Above Plasterboard 19mm	0.9		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/Library/Rumpus	Timber Above Plasterboard 19mm	15.1		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 2/LDRY/PWDR	Timber Above Plasterboard 19mm	0.8		No Insulation	Carpet+Rubber Underlay 18mm
Master Bed/Kitchen/Living	Timber Above Plasterboard 19mm	2.7		No Insulation	Carpet+Rubber Underlay 18mm
Master Bed/Library/Rumpus	Timber Above Plasterboard 19mm	14.6		No Insulation	Carpet+Rubber Underlay 18mm
WIR M/Kitchen/Living	Timber Above Plasterboard 19mm	5.6		No Insulation	Carpet+Rubber Underlay 18mm
Ensuite/Kitchen/Living	Timber Above Plasterboard 19mm	5.6		No Insulation	Carpet+Rubber Underlay 18mm
Corridor/Kitchen/Living	Timber Above Plasterboard 19mm	20.9		No Insulation	Carpet+Rubber Underlay 18mm
WIR/Kitchen/Living	Timber Above Plasterboard 19mm	5.3		No Insulation	Carpet+Rubber Underlay 18mm
Bed 4/Kitchen/Living	Timber Above Plasterboard 19mm	17.2		No Insulation	Carpet+Rubber Underlay 18mm
Ensuite 2/LDRY/PWDR	Timber Above Plasterboard 19mm	4.4		No Insulation	Carpet+Rubber Underlay 18mm
Bath/Kitchen/Living	Timber Above Plasterboard 19mm	1.4		No Insulation	Carpet+Rubber Underlay 18mm
Bath/LDRY/PWDR	Timber Above Plasterboard 19mm	0.9		No Insulation	Carpet+Rubber Underlay 18mm
Bath/Pantry	Timber Above Plasterboard 19mm	4.4		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3/Kitchen/Living	Timber Above Plasterboard 19mm	11.4		No Insulation	Carpet+Rubber Underlay 18mm
Bedroom 3	Suspended Timber Floor 19mm	5.8	Totally Open	Bulk Insulation in Contact with Floor R2.5	Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction	Added	Roof space
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Building features continued

		insulation	above
Garage	Plasterboard	No insulation	No
Garage	Concrete Above Plasterboard	Bulk Insulation R2.5	No
Entry	Plasterboard	Bulk Insulation R3	No
Entry	Concrete Above Plasterboard	No Insulation	No
Subfloor Store	Plasterboard	Bulk Insulation R3	No
Subfloor Store	Concrete Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3	No
Kitchen/Living	Timber Above Plasterboard	No Insulation	No
Library/Rumpus	Plasterboard	Bulk Insulation R3	No
Library/Rumpus	Timber Above Plasterboard	No Insulation	No
LDRY/PWDR	Plasterboard	Bulk Insulation R3	No
LDRY/PWDR	Timber Above Plasterboard	No Insulation	No
Pantry	Plasterboard	Bulk Insulation R3	No
Pantry	Timber Above Plasterboard	No Insulation	No
Teenagers Wing	Plasterboard	Bulk Insulation R3	No
Teenagers Wing	Concrete Above Plasterboard	No Insulation	No
Ens	Plasterboard	Bulk Insulation R3	No
Teen Room	Plasterboard	Bulk Insulation R3	No
Teenage Retreat	Plasterboard	Bulk Insulation R3	No
Bedroom 2	Plasterboard	Bulk Insulation R3	No
Master Bed	Plasterboard	Bulk Insulation R3	No
WIR M	Plasterboard	Bulk Insulation R3	No
Ensuite	Plasterboard	Bulk Insulation R3	No
Corridor	Plasterboard	Bulk Insulation R3	No
WIR	Plasterboard	Bulk Insulation R3	No
Bed 4	Plasterboard	Bulk Insulation R3	No
Ensuite 2	Plasterboard	Bulk Insulation R3	No
Bath	Plasterboard	Bulk Insulation R3	No
Bedroom 3	Plasterboard	Bulk Insulation R3	No

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Building features continued

Ceiling penetrations

Location	Number	Type	Diameter (mm)	Sealed/unsealed
Entry	2	Downlights - LED	150	Sealed
Kitchen/Living	16	Downlights - LED	150	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed
Library/Rumpus	6	Downlights - LED	150	Sealed
LDRY/PWDR	1	Downlights - LED	150	Sealed
LDRY/PWDR	1	Exhaust Fans	300	Sealed
Pantry	1	Downlights - LED	150	Sealed
Teenagers Wing	4	Downlights - LED	150	Sealed
Ens	1	Downlights - LED	150	Sealed
Ens	1	Exhaust Fans	300	Sealed
Teen Room	2	Downlights - LED	150	Sealed
Teenage Retreat	8	Downlights - LED	150	Sealed
Bedroom 2	3	Downlights - LED	150	Sealed
Master Bed	3	Downlights - LED	150	Sealed
WIR M	1	Downlights - LED	150	Sealed
Ensuite	1	Downlights - LED	150	Sealed
Corridor	4	Downlights - LED	150	Sealed
WIR	1	Downlights - LED	150	Sealed
Bed 4	3	Downlights - LED	150	Sealed
Ensuite 2	1	Downlights - LED	150	Sealed
Ensuite 2	1	Exhaust Fans	300	Sealed
Bath	1	Downlights - LED	150	Sealed
Bedroom 3	3	Downlights - LED	150	Sealed

Ceiling fans

Location	Number	Diameter (mm)
None Present		

Roof type

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

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Additional information

All windows not marked in elevations modelled as 45% operable sliding windows. To be updated if construction plans change.

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: 999810S




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: Tuesday, 05 March 2019

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



Project summary		
Project name	18 Alexander Street Lot 9	
Street address	18 Alexander Avenue Collaroy 2097	
Local Government Area	Northern Beaches Council	
Plan type and plan number	deposited 6984	
Lot no.	9	
Section no.	-	
Project type	separate dwelling house	
No. of bedrooms	1	
Project score		
Water	 40	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

Project name	18 Alexander Street Lot 9
Street address	18 Alexander Avenue Collaroy 2097
Local Government Area	Northern Beaches Council
Plan type and plan number	Deposited Plan 6984
Lot no.	9
Section no.	-

Project type

Project type	separate dwelling house
No. of bedrooms	1

Site details

Site area (m ²)	150
Roof area (m ²)	88
Conditioned floor area (m2)	60.0
Unconditioned floor area (m2)	0.0
Total area of garden and lawn (m2)	0

Assessor details and thermal loads

Assessor number	BDAV/12/1473
Certificate number	0003662590
Climate zone	56
Area adjusted cooling load (MJ/m ² .year)	26
Area adjusted heating load (MJ/m ² .year)	39

Project score

Water	✓ 40	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 3 star (> 4.5 but <= 6 L/min) 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 6 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 6 star in each bathroom in the development.		✓	

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 - suspended floor/open subfloor	All or part of floor area square metres


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: ceiling fans + 1-phase airconditioning; Energy rating: 5 Star		✓	✓
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: ceiling fans + 1-phase airconditioning; Energy rating: 5 Star		✓	✓
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: 1-phase airconditioning; Energy rating: 5 Star		✓	✓
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: 1-phase airconditioning; Energy rating: 5 Star		✓	✓
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: natural ventilation only, or no laundry; Operation control: n/a		✓ ✓ ✓	✓ ✓ ✓
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 2 of the bedrooms / study; dedicated		✓	✓


Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<ul style="list-style-type: none"> • at least 1 of the living / dining rooms; dedicated • the kitchen; dedicated • all bathrooms/toilets; dedicated • the laundry; dedicated • all hallways; dedicated 		    	    
Natural lighting			
The applicant must install a window and/or skylight in the kitchen of the dwelling for natural lighting.			
Other			
The applicant must install a gas cooktop & gas 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.			
The applicant must install a fixed indoor or sheltered 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.

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 999799M_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, 06 March 2019

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



Project summary		
Project name	18 Alexander Street Lot 8_02	
Street address	18a Alexander Street Collaroy 2097	
Local Government Area	Northern Beaches Council	
Plan type and plan number	deposited 6984	
Lot no.	8	
Section no.	-	
No. of residential flat buildings	0	
No. of units in residential flat buildings	0	
No. of multi-dwelling houses	2	
No. of single dwelling houses	0	
Project score		
Water	 42	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

Project name	18 Alexander Street Lot 8_02
Street address	18a Alexander Street Collaroy 2097
Local Government Area	Northern Beaches Council
Plan type and plan number	deposited 6984
Lot no.	8
Section no.	-

Project type

No. of residential flat buildings	0
No. of units in residential flat buildings	0
No. of multi-dwelling houses	2
No. of single dwelling houses	0

Site details

Site area (m²)	547.5
Roof area (m²)	300
Non-residential floor area (m²)	0.0
Residential car spaces	3
Non-residential car spaces	0

Common area landscape

Common area lawn (m²)	0.0
Common area garden (m²)	0.0
Area of indigenous or low water use species (m²)	0.0

Assessor details

Assessor number	BDAV/12/1473
Certificate number	0003662690
Climate zone	56

Project score

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

Description of project

The tables below describe the dwellings and common areas within the project

Multi-dwelling houses

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
a	4 or more bedrooms	311.0	6.0	105.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
b	1	60.0	0.0	29.0	0.0

No common areas specified.

Schedule of BASIX commitments

1. Commitments for multi-dwelling houses

(a) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Comfort

2. Commitments for single dwelling houses

3. Commitments for common areas and central systems/facilities for the development (non-building specific)

- (i) Water
- (ii) Energy

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.

1. Commitments for multi-dwelling houses

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install:			
(aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and		✓	✓
(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✓	✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	-	-	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
a	individual water tank (no. 1)	Tank size (min) 2000.0 litres	To collect run-off from at least: 150.0 square metres of roof area; 0.0 square metres of impervious area; 0.0 square metres of garden and lawn area; and 0.0 square metres of planter box area.	yes	no	yes	no	no

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✓ ✓	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below; (bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓ ✓ ✓	✓
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	
(j) The applicant must install the photovoltaic system specified for the dwelling under the "Photovoltaic system" heading of the "Alternative energy" column of the table below, and connect the system to that dwelling's electrical system.	✓	✓	✓

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 6 star	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
a	ceiling fans + 1-phase airconditioning 3 Star (zoned)	ceiling fans + 1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	6 (dedicated)	3 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	2	yes
All other dwellings	ceiling fans + 1-phase airconditioning 3 Star (zoned)	ceiling fans + 1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	1-phase airconditioning 3 Star (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & gas oven	-	yes	-	-	-	no	yes

Alternative energy	
Dwelling no.	Photovoltaic system (min rated electrical output in peak kW)
All dwellings	0.0

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) 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 a final occupation certificate for the proposed development.			

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol 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.	✓		
(e) 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.		✓	
(f) 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.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
a	40.8	26.2
All other dwellings	16.0	24.2

	Construction of floors and walls				
Dwelling no.	Concrete slab on ground(m ²)	Suspended floor with open subfloor (m ²)	Suspended floor with enclosed subfloor (m ²)	Suspended floor above garage (m ²)	Primarily rammed earth or mudbrick walls
a	110	44	24	102	No

	Construction of floors and walls				
Dwelling no.	Concrete slab on ground(m²)	Suspended floor with open subfloor (m²)	Suspended floor with enclosed subfloor (m²)	Suspended floor above garage (m²)	Primarily rammed earth or mudbrick walls
All other dwellings	-	60	-	-	No

3. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✓	✓
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✓	✓	✓
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✓	✓	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✓	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✓	✓
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✓	✓

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	no common facility	no common facility	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✓	✓
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✓	✓
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. 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).
2. 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.
3. Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).