



### Environa Studio Proposed Residential Development

To be built at 149a Seaforth Crescent, Seaforth NSW 2092

Issue	File Ref	Description	Author	Date
A	17-1677	NatHERS Thermal Comfort and BASIX Assessment	SR	20/12/2017
B	18-0560	NatHERS Thermal Comfort and BASIX Update to reflect design changes	DO	15/05/2018
C	23-4157R	NatHERS Thermal Comfort and BASIX Update	MF	17/01/2023

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

If there is a change to this specification during design or construction phases, please contact Efficient Living and quote the above file reference for advice, and to obtain an updated Certificate if required.



Assessor: Mariana Foganhole  
Email: mariana@efficientliving.com.au

License Holder: Tracey Cools  
Accreditation Number: HERA10033

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#### BASIX Details:

NatHERS Certificate Number: 0008378705

BASIX adjusted conditioned area: 312 m<sup>2</sup>

BASIX adjusted un-conditioned area: 40 m<sup>2</sup>

Area adjusted heating load: 43.0 MJ/ m<sup>2</sup>/pa

Area adjusted cooling load: 18.9 MJ/ m<sup>2</sup>/pa

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#### Specification

Heating and cooling loads for the development have been determined using BERS Pro Plus 4.4 thermal comfort simulation software, and assessed under the thermal simulation method of the BASIX Protocol.

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

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

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#### Floors

Concrete slab on ground with a minimum R1.0 insulation (insulation only value) required.

Suspended timber floor with R2.5 insulation (insulation only value) to open and enclosed suspended areas

Timber between levels, no insulation required where conditioned spaces above and below

Timber between levels, R2.5 insulation (insulation only value) above and below unconditioned spaces

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#### External Walls

SIP wall system R2.6 with additional insulated plasterboard for total system R-value Rt3.75

#### External Colour:

Default colour modelled (medium)

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#### Walls within dwellings

Plasterboard on studs, no insulation required

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#### Glazing Doors/Windows

Performance glazing throughout:

Fixed panels and sliding doors and windows

U-Value: 2.20 (equal to or lower than) SHGC: 0.39 (±10%)

Hinged doors and awning windows

U-Value: 2.20 (equal to or lower than) SHGC: 0.32 (±10%)

Louvre windows

U-Value: 3.40 (equal to or lower than) SHGC: 0.40 (±10%)

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

#### Skylights

None

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#### Roof and Ceilings

Insulated metal panel roof 120mm thick with Rt5.73 to top level

Metal or timber roof with R4.3 insulation (insulation only value) where roof or balcony above on lower levels

Plasterboard ceiling with no insulation

#### External Colour

Dark (SA > 0.7)

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#### Ceiling Penetrations

Note: No loss of ceiling insulation have been modelled due to downlights, if downlights are intended to be installed the model may need to be updated to account for loss of ceiling insulation in accordance to NatHERS protocols.

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#### Floor coverings

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

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#### External Shading

Fixed shading as per stamped drawings

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#### Ventilation

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

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. 0008378705

Generated on 31 Jan 2023 using BERS Pro v4.4.1.5d (3.21)

### Property

**Address** 149a Seaforth Crescent, Seaforth, NSW  
, 2092

**Lot/DP** 2/565073

**NCC Class\*** 1A

**Type** New Dwelling

### Plans

**Main Plan** 17-1677

**Prepared by** Environa Studio

### Construction and environment

Assessed floor area (m <sup>2</sup> *)	Exposure Type
Conditioned* 312.0	Exposed
Unconditioned* 40.0	<b>NatHERS climate zone</b>
Total 352.0	56
Garage 0.0	



### Accredited assessor

**Name** Tracey Cools

**Business name** Efficient Living Pty Ltd

**Email** admin@efficientliving.com.au

**Phone** 02 9970 6181

**Accreditation No.** HERA10033

**Assessor Accrediting Organisation**

HERA

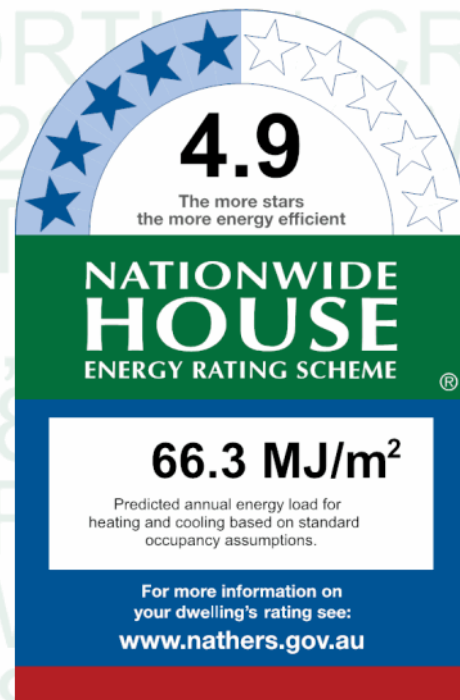
**Declaration of interest** None

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal performance

Heating	Cooling
<b>42.8</b> MJ/m <sup>2</sup>	<b>23.6</b> MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [hstar.com.au/QR/Generate?p=ShsDRtCqi](http://hstar.com.au/QR/Generate?p=ShsDRtCqi). When using either link, ensure you are visiting [hstar.com.au](http://hstar.com.au)



## Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional notes

I have modeled the shading in accordance with NatHERS principles

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ATB-006-02 B	ATB-006-02 B AI Thermally Broken B DG Argon Fill Tint-Clear	3.4	0.40	0.38	0.42
CMP-006-04 I	CMP-006-04 I Composite B DG Argon Fill Low Solar Gain low-E -Clear	2.2	0.39	0.37	0.41
CMP-005-04 I	CMP-005-04 I Composite A DG Argon Fill Low Solar Gain low-E -Clear	2.2	0.32	0.30	0.34

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 4	ATB-006-02 B	n/a	2100	550	n/a	90	NW	No
Bedroom 4	CMP-006-04 I	n/a	2100	2050	n/a	00	NW	No
Hallway L1	CMP-006-04 I	n/a	2250	1000	n/a	00	NW	No
Hallway L1	CMP-006-04 I	n/a	2100	900	n/a	00	SE	No
Hallway L1	CMP-006-04 I	n/a	2100	850	n/a	00	SE	No
Laundry	CMP-005-04 I	n/a	2250	930	n/a	90	NW	No
Laundry	ATB-006-02 B	n/a	1250	600	n/a	90	NW	No
Bath	ATB-006-02 B	n/a	1250	930	n/a	90	NW	No
Bath	ATB-006-02 B	n/a	1250	860	n/a	90	NE	No
Kitchen/Living	ATB-006-02 B	n/a	600	600	n/a	90	SE	No
Kitchen/Living	ATB-006-02 B	n/a	600	600	n/a	90	SE	No
Kitchen/Living	CMP-006-04 I	n/a	600	1400	n/a	00	SE	No
Kitchen/Living	CMP-006-04 I	n/a	600	1400	n/a	00	SE	No
Kitchen/Living	CMP-006-04 I	n/a	2250	5150	n/a	45	NW	No
Kitchen/Living	ATB-006-02 B	n/a	2250	590	n/a	90	NW	No
Kitchen/Living	ATB-006-02 B	n/a	2250	590	n/a	90	NW	No
Pantry	ATB-006-02 B	n/a	600	600	n/a	90	SE	No
Pantry	CMP-006-04 I	n/a	600	980	n/a	00	SE	No
Toilet	ATB-006-02 B	n/a	850	700	n/a	90	SE	No
Entrance	CMP-006-04 I	n/a	1330	1000	n/a	00	NW	No
Entrance	CMP-006-04 I	n/a	2140	1550	n/a	00	N	No
Entrance	ATB-006-02 B	n/a	2140	550	n/a	90	N	No
Rumpus	CMP-006-04 I	n/a	2250	2540	n/a	45	NW	No
Rumpus	ATB-006-02 B	n/a	2250	590	n/a	90	NW	No
Hallway L2	CMP-006-04 I	n/a	2140	1550	n/a	00	N	No
Hallway L2	ATB-006-02 B	n/a	2140	550	n/a	90	N	No
Hallway L2	CMP-006-04 I	n/a	2100	900	n/a	00	SE	No
Hallway L2	CMP-006-04 I	n/a	2250	1000	n/a	00	NW	No
Bathroom	ATB-006-02 B	n/a	1250	600	n/a	90	SW	No
Bathroom	ATB-006-02 B	n/a	1250	600	n/a	90	SW	No
Bedroom 2	CMP-006-04 I	n/a	2100	2050	n/a	00	NW	No
Bedroom 2	ATB-006-02 B	n/a	2100	550	n/a	90	NW	No
Void/stairs	CMP-006-04 I	n/a	2140	1550	n/a	00	N	No
Void/stairs	ATB-006-02 B	n/a	2140	550	n/a	90	N	No
Void/stairs	CMP-006-04 I	n/a	2270	1000	n/a	00	NW	No
Study L4	CMP-006-04 I	n/a	2250	2540	n/a	45	NW	No
Study L4	ATB-006-02 B	n/a	2250	590	n/a	90	NW	No

\* Refer to glossary.

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	CMP-006-04 I	n/a	2250	1670	n/a	00	NE	No
Bedroom 1	ATB-006-02 B	n/a	2100	800	n/a	90	SW	No
Bedroom 1	CMP-006-04 I	n/a	2100	2050	n/a	00	NW	No
Bedroom 1	ATB-006-02 B	n/a	2100	550	n/a	90	NW	No
Salon	CMP-006-04 I	n/a	2250	2540	n/a	45	NW	No
Salon	ATB-006-02 B	n/a	2250	590	n/a	90	NW	No
Bath L4	CMP-005-04 I	n/a	1650	1650	n/a	10	SE	No
Bath L4	ATB-006-02 B	n/a	850	700	n/a	90	SE	No
Toilet 1 L4	ATB-006-02 B	n/a	850	700	n/a	90	SE	No
Study	ATB-006-02 B	n/a	2250	550	n/a	90	NW	No
Study	CMP-006-04 I	n/a	2250	2500	n/a	45	NW	No
Bedroom 3	CMP-006-04 I	n/a	2250	2540	n/a	45	NW	No
Bedroom 3	ATB-006-02 B	n/a	2250	590	n/a	90	NW	No
Living/library	ATB-006-02 B	n/a	2100	800	n/a	90	SW	No
Living/library	CMP-006-04 I	n/a	2100	2050	n/a	00	NW	No
Living/library	ATB-006-02 B	n/a	2100	550	n/a	90	NW	No
Living/library	CMP-006-04 I	n/a	2250	1670	n/a	00	NE	No
Toilet L2	ATB-006-02 B	n/a	850	700	n/a	90	SE	No
Entry	CMP-005-04 I	n/a	2100	900	n/a	90	NW	No

## Roof window type and performance

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

## Skylight type and performance

Skylight ID	Skylight description



Skylight ID	Skylight description
No Data Available	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Hallway L1	2250	900	90	SE
Entrance	2400	1000	90	SE

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Fibro Cavity Panel on Battens	0.50	Medium	Bulk Insulation R3.5	No
EW-2	Fibro Cavity Panel on Battens	0.50	Medium	Bulk Insulation R2.7	No
EW-3	Fibro Cavity Panel on Battens	0.50	Medium	Bulk Insulation R2.7	No
EW-4	Fibro Cavity Panel on Battens	0.50	Medium	Bulk Insulation R3.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 4	EW-1	2550	3745	SE	2200	NO
Bedroom 4	EW-1	2550	4200	SW	0	NO
Bedroom 4	EW-1	2550	3745	NW	0	YES
Hallway L1	EW-1	2550	1645	NW	0	YES
Hallway L1	EW-1	2550	5758	N	0	NO
Hallway L1	EW-1	2550	4650	SE	1050	NO
Hallway L1	EW-1	2550	3700	SW	10350	YES
Hallway L1	EW-1	2550	6595	SE	2200	YES
Laundry	EW-1	2550	2190	NW	1450	NO
Bath	EW-1	2550	1595	NW	1450	NO
Bath	EW-1	2550	3600	NE	0	YES
Kitchen/Living	EW-1	2700	650	NE	0	YES
Kitchen/Living	EW-1	2700	4790	SE	0	NO
Kitchen/Living	EW-1	2700	7045	NW	3500	NO
Pantry	EW-1	2700	1640	SE	0	NO



Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Toilet	EW-1	2700	1090	SE	0	NO
Entrance	EW-1	2700	1645	NW	0	YES
Entrance	EW-1	2700	6818	N	0	NO
Entrance	EW-1	2700	3995	SE	1450	NO
Rumpus	EW-3	1550	1000	SE	5000	NO
Rumpus	EW-1	2550	4640	SE	2500	YES
Rumpus	EW-1	2550	3790	NW	1650	NO
Hallway L2	EW-1	2550	5758	N	0	NO
Hallway L2	EW-1	2550	4650	SE	2450	NO
Hallway L2	EW-1	2550	1500	SW	10350	YES
Hallway L2	EW-1	2550	1645	NW	0	YES
Bathroom	EW-1	2550	3745	SE	2500	NO
Bathroom	EW-1	2550	2145	SW	0	NO
Bedroom 2	EW-1	2550	4245	SW	0	NO
Bedroom 2	EW-1	2550	3745	NW	0	NO
Void/stairs	EW-1	2970	6818	N	316	NO
Void/stairs	EW-1	3350	7795	SE	0	NO
Void/stairs	EW-1	2590	1645	NW	550	YES
Study L4	EW-1	2590	650	NE	1825	YES
Study L4	EW-1	2590	3795	NW	2400	NO
Bedroom 1	EW-1	2485	1850	NE	7650	YES
Bedroom 1	EW-1	2865	6845	SW	0	NO
Bedroom 1	EW-1	2380	3750	NW	550	NO
Salon	EW-1	2590	3790	NW	2400	YES
Bath L4	EW-1	3350	5545	SE	0	NO
Bath L4	EW-1	3235	2045	SW	0	NO
Toilet 1 L4	EW-1	3350	1990	SE	0	NO
Study	EW-1	2550	3795	NW	1450	NO
Study	EW-1	2550	1100	SW	0	YES
Bedroom 3	EW-1	2550	3795	NW	1650	NO
Bedroom 3	EW-1	2550	2500	NE	0	YES
Living/library	EW-1	2700	3795	SE	0	NO
Living/library	EW-1	2700	8900	SW	0	NO
Living/library	EW-1	2700	3750	NW	0	NO
Living/library	EW-1	2700	1850	NE	7600	YES
Living/library	EW-1	2700	545	NW	3500	YES
Toilet L2	EW-1	2550	1940	SE	2500	NO
Entry	EW-4	2177	3956	N	0	NO
Entry	EW-4	2177	1012	E	0	NO

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Entry	EW-4	2177	2072	S	0	YES
Entry	EW-4	2177	1050	SE	0	YES
Entry	EW-4	2177	2100	SW	0	NO
Entry	EW-4	2177	1300	NW	300	NO

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		157.00	No insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		105.00	Bulk Insulation, No Air Gap R2.5

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 4	Concrete Slab on Ground 100mm	15.60	None	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Hallway L1/Entry	Concrete Above Plasterboard 100mm	4.00		No Insulation	Cork Tiles or Parquetry 8mm
Hallway L1	Concrete Slab on Ground 100mm	21.50	None	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Laundry	Concrete Slab on Ground 100mm	8.20	None	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Bath	Concrete Slab on Ground 100mm	7.10	None	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Kitchen/Living /Rumpus	Timber Above Plasterboard 19mm	20.20		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Kitchen/Living /Hallway L2	Timber Above Plasterboard 19mm	1.50		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Kitchen/Living /Bedroom 3	Timber Above Plasterboard 19mm	8.80		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Kitchen/Living /Toilet L2	Timber Above Plasterboard 19mm	1.50		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Kitchen/Living	Suspended Timber Floor 19mm	12.30	Totally Open	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Pantry	Suspended Timber Floor 19mm	3.20	Totally Open	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Toilet/Hallway L2	Timber Above Plasterboard 19mm	0.90		Bulk Insulation R2.5	Ceramic Tiles 8mm
Toilet	Suspended Timber Floor 19mm	1.10	Totally Open	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Entrance/Hallway L2	Timber Above Plasterboard 19mm	13.90		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Entrance	Suspended Timber Floor 19mm	3.90	Totally Open	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Rumpus/Hallway L1	Timber Above Plasterboard 19mm	5.00		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Rumpus/Study	Timber Above Plasterboard 19mm	11.60		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Rumpus	Suspended Timber Floor 19mm	12.00	Totally Open	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Hallway L2/Hallway L1	Timber Above Plasterboard 19mm	16.50		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	Suspended Timber Floor 19mm	7.80	Totally Open	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Bedroom 2/Bedroom 4	Timber Above Plasterboard 19mm	15.40		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Void/stairs/Kitchen/Living	Timber Above Plasterboard 19mm	5.60		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Void/stairs/Toilet	Timber Above Plasterboard 19mm	2.20		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Void/stairs/Entrance	Timber Above Plasterboard 19mm	17.50		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Study L4/Kitchen/Living	Timber Above Plasterboard 19mm	18.20		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bedroom 1/Living/library	Timber Above Plasterboard 19mm	25.30		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Salon/Kitchen/Living	Timber Above Plasterboard 19mm	17.60		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Salon/Living/library	Timber Above Plasterboard 19mm	2.60		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bath L4/Pantry	Timber Above Plasterboard 19mm	3.30		Bulk Insulation R2.5	Ceramic Tiles 8mm
Bath L4/Living/library	Timber Above Plasterboard 19mm	7.60		Bulk Insulation R2.5	Ceramic Tiles 8mm
Toilet 1 L4/Kitchen/Living	Timber Above Plasterboard 19mm	1.90		Bulk Insulation R2.5	Ceramic Tiles 8mm
Study	Concrete Slab on Ground 100mm	15.60	None	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm
Bedroom 3/Hallway L1	Timber Above Plasterboard 19mm	3.90		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bedroom 3/Laundry	Timber Above Plasterboard 19mm	6.10		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Bedroom 3/Bath	Timber Above Plasterboard 19mm	5.50		Bulk Insulation R2.5	Carpet+Rubber Underlay 18mm
Living/library/Rumpus	Timber Above Plasterboard 19mm	1.90		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Living/library/Bathroom	Timber Above Plasterboard 19mm	8.00		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Living/library/Bedroom 2	Timber Above Plasterboard 19mm	15.80		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Living/library/Toilet L2	Timber Above Plasterboard 19mm	0.60		Bulk Insulation R2.5	Cork Tiles or Parquetry 8mm
Living/library	Suspended Timber Floor 19mm	9.60	Totally Open	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Toilet L2	Suspended Timber Floor 19mm	2.00	Totally Open	Bulk Insulation in Contact with Floor R2.5	Cork Tiles or Parquetry 8mm
Entry	Concrete Slab on Ground 100mm	5.40	None	Bulk Insulation in Contact with Floor R1	Cork Tiles or Parquetry 8mm

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 4	Plasterboard	Bulk Insulation R3.5	No
Bedroom 4	Timber Above Plasterboard	Bulk Insulation R2.5	No
Hallway L1	Plasterboard	Bulk Insulation R3.5	No
Hallway L1	Timber Above Plasterboard	Bulk Insulation R2.5	No
Laundry	Plasterboard	No insulation	No
Laundry	Timber Above Plasterboard	Bulk Insulation R2.5	No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bath	Plasterboard	No insulation	No
Bath	Timber Above Plasterboard	Bulk Insulation R2.5	No
Kitchen/Living	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living	Timber Above Plasterboard	Bulk Insulation R2.5	No
Pantry	Plasterboard	Bulk Insulation R3.5	No
Pantry	Timber Above Plasterboard	Bulk Insulation R2.5	No
Toilet	Plasterboard	Bulk Insulation R3.5	No
Toilet	Timber Above Plasterboard	Bulk Insulation R2.5	No
Entrance	Plasterboard	Bulk Insulation R3.5	No
Entrance	Timber Above Plasterboard	Bulk Insulation R2.5	No
Rumpus	Plasterboard	No insulation	No
Rumpus	Timber Above Plasterboard	Bulk Insulation R2.5	No
Hallway L2	Plasterboard	Bulk Insulation R3.5	No
Hallway L2	Timber Above Plasterboard	Bulk Insulation R2.5	No
Bathroom	Plasterboard	Bulk Insulation R3.5	No
Bathroom	Timber Above Plasterboard	Bulk Insulation R2.5	No
Bedroom 2	Plasterboard	Bulk Insulation R3.5	No
Bedroom 2	Timber Above Plasterboard	Bulk Insulation R2.5	No
Void/stairs	Timber	No insulation	No
Study L4	Timber	No insulation	No
Bedroom 1	Timber	No insulation	No
Salon	Timber	No insulation	No
Bath L4	Timber	No insulation	No
Toilet 1 L4	Timber	No insulation	No
Study	Plasterboard	No insulation	No
Study	Timber Above Plasterboard	Bulk Insulation R2.5	No
Bedroom 3	Plasterboard	No insulation	No
Bedroom 3	Timber Above Plasterboard	Bulk Insulation R2.5	No
Living/library	Timber Above Plasterboard	Bulk Insulation R2.5	No
Toilet L2	Plasterboard	Bulk Insulation R2.5	No
Toilet L2	Timber Above Plasterboard	Bulk Insulation R2.5	No
Entry	Plasterboard	No insulation	No
Entry	Concrete Above Plasterboard	No Insulation	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm <sup>2</sup> )	Sealed/unsealed
Laundry	1	Exhaust Fans	300	Sealed
Kitchen/Living	1	Exhaust Fans	300	Sealed

Location	Quantity	Type	Diameter (mm )	Sealed/unsealed
Bathroom	1	Exhaust Fans	300	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Timber Shingles	Bulk Insulation, No Air Gap Above R4.3	0.85	Dark
Corrugated Iron	Bulk Insulation, No Air Gap Above R5.7	0.85	Dark
Corrugated Iron	Bulk Insulation, No Air Gap Above R4.3	0.85	Dark



## Explanatory notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

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 ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category – exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category – open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category – suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category – protected</b>	terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# BASIX<sup>®</sup>Certificate

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

## Single Dwelling

Certificate number: 889944S\_04

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 10/09/2020 published by the Department. This document is available at [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

Secretary

Date of issue: Wednesday, 01 February 2023

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



Planning,  
Industry &  
Environment

### Project summary

Project name	149a Seaforth Crescent_04
Street address	Seaforth Crescent Seaforth 2092
Local Government Area	Northern Beaches Council
Plan type and plan number	deposited 565073
Lot no.	2
Section no.	-
Project type	separate dwelling house
No. of bedrooms	5

### Project score

Water	✓ 41	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 51	Target 50

### Certificate Prepared by

Name / Company Name: Efficient Living

ABN (if applicable): 82116346082

# Description of project

## Project address

Project name	149a Seaforth Crescent_04
Street address	n/a Seaforth Crescent Seaforth 2092
Local Government Area	Northern Beaches Council
Plan type and plan number	Deposited Plan 565073
Lot no.	2
Section no.	-

## Project type

Project type	separate dwelling house
No. of bedrooms	5

## Site details

Site area (m <sup>2</sup> )	1141
Roof area (m <sup>2</sup> )	167
Conditioned floor area (m2)	312.2
Unconditioned floor area (m2)	40.1
Total area of garden and lawn (m2)	100

## Assessor details and thermal loads

Assessor number	HERA10033
Certificate number	0008378705
Climate zone	56
Area adjusted cooling load (MJ/m <sup>2</sup> .year)	24
Area adjusted heating load (MJ/m <sup>2</sup> .year)	43
Ceiling fan in at least one bedroom	No
Ceiling fan in at least one living room or other conditioned area	No

## Project score

Water	✓ 41	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 51	Target 50

## Schedule of BASIX commitments

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

Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Fixtures</b>			
The applicant must install showerheads with a minimum rating of 3 star (> 6 but <= 7.5 L/min) in all showers in the development.		✓	✓
The applicant must install a toilet flushing system with a minimum rating of 3 star in each toilet in the development.		✓	✓
The applicant must install taps with a minimum rating of 4 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 4 star in each bathroom in the development.		✓	
<b>Alternative water</b>			
<b>Rainwater tank</b>			
The applicant must install a rainwater tank of at least 5000 litres on the site. This rainwater tank must meet, and be installed in accordance with, the requirements of all applicable regulatory authorities.	✓	✓	✓
The applicant must configure the rainwater tank to collect rain runoff from at least 150 square metres of the roof area of the development (excluding the area of the roof which drains to any stormwater tank or private dam).		✓	✓
The applicant must connect the rainwater tank to: <ul style="list-style-type: none"> <li>all toilets in the development</li> <li>at least one outdoor tap in the development (Note: NSW Health does not recommend that rainwater be used for human consumption in areas with potable water supply.)</li> <li>a tap that is located within 10 metres of the swimming pool in the development</li> </ul>		✓ ✓ ✓	✓ ✓ ✓
<b>Swimming pool</b>			
The swimming pool must not have a volume greater than 58 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.




























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


Floor and wall construction	Area
floor - concrete slab on ground	76.0 square metres
floor - suspended floor/open subfloor	54.0 square metres


Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Hot water</b>			
The applicant must install the following hot water system in the development, or a system with a higher energy rating: electric heat pump with a performance of 21 to 25 STCs or better.	✓	✓	✓
<b>Cooling system</b>			
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: ceiling fans + 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: ceiling fans + 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The cooling system must provide for day/night zoning between living areas and bedrooms.		✓	✓
<b>Heating system</b>			
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
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 3.0 - 3.5		✓	✓
The heating system must provide for day/night zoning between living areas and bedrooms.		✓	✓
<b>Ventilation</b>			
The applicant must install the following exhaust systems in the development:			
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: manual switch on/off		✓	✓
Kitchen: individual fan, ducted to façade or roof; Operation control: manual switch on/off		✓	✓
Laundry: individual fan, ducted to façade or roof; Operation control: manual switch on/off		✓	✓
<b>Artificial lighting</b>			
The applicant must ensure that the "primary type of artificial lighting" is fluorescent or light emitting diode (LED) lighting in each of the following rooms, and where the word "dedicated" appears, the fittings for those lights must only be capable of accepting fluorescent or light emitting diode (LED) lamps:			
<ul style="list-style-type: none"> <li>at least 7 of the bedrooms / study; dedicated</li> </ul>		✓	✓


Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<ul style="list-style-type: none"> <li>at least 4 of the living / dining rooms; dedicated</li> <li>the kitchen; dedicated</li> <li>all bathrooms/toilets; dedicated</li> <li>the laundry; dedicated</li> <li>all hallways; dedicated</li> </ul>		    	    
<b>Natural lighting</b>			
The applicant must install a window and/or skylight in the kitchen of the dwelling for natural lighting.			
The applicant must install a window and/or skylight in 6 bathroom(s)/toilet(s) in the development for natural lighting.			
<b>Swimming pool</b>			
The applicant must install the following heating system for the swimming pool in the development (or alternatively must not install any heating system for the swimming pool): electric heat pump			
The applicant must install a timer for the swimming pool pump in the development.			
<b>Alternative energy</b>			
The applicant must install a photovoltaic system with the capacity to generate at least 2.2 peak kilowatts of electricity as part of the development. The applicant must connect this system to the development's electrical system.			
<b>Other</b>			
The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling.			
The applicant must 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.