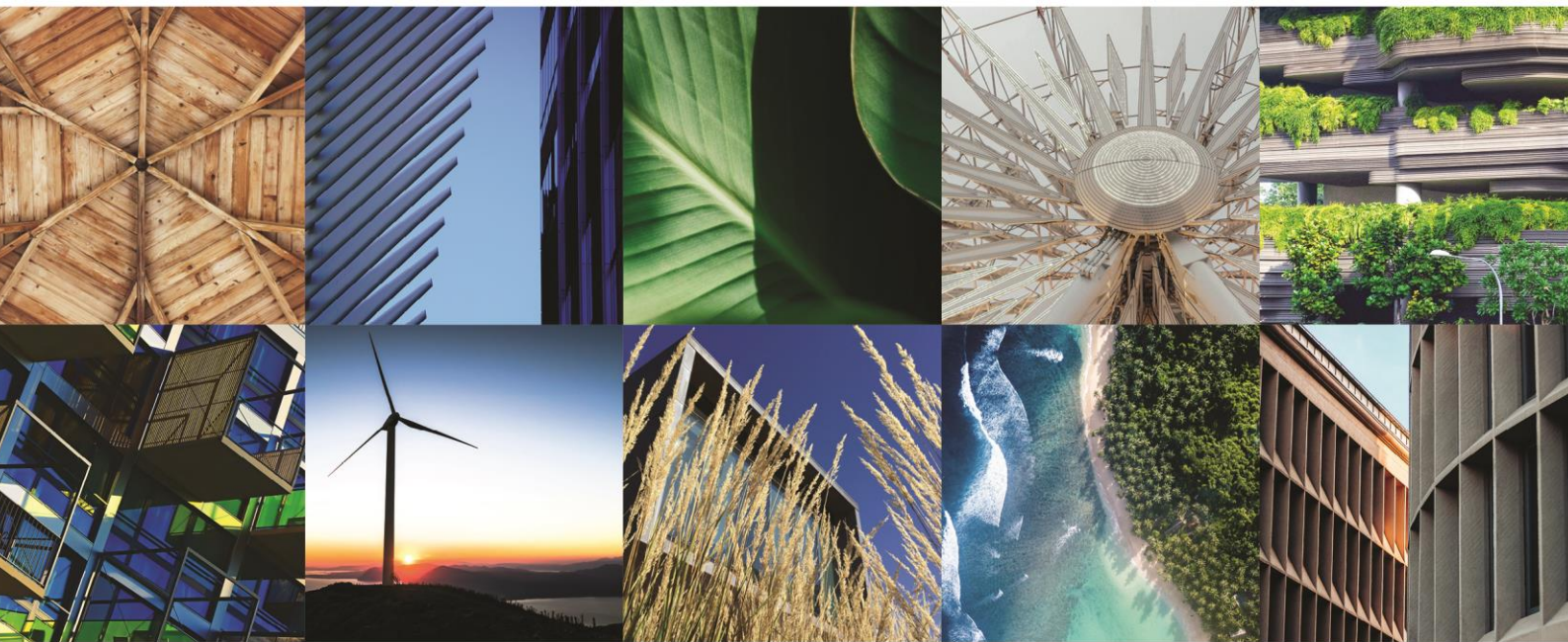




JJ Drafting

To be built at 13 Ilya Avenue, Bayview

Issue	File Ref	Description	Author	Date
A	22-3752R	NatHERS Thermal Comfort and BASIX Assessment	PM	04/11/2022

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



Nationwide House Energy Rating Scheme

NatHERS Certificate No. #HR-LYFGTP-02

Generated on 04 Nov 2022 using Hero 3.0.1

Property

Address 13, Ilya Avenue, Bayview, NSW, 2104
Lot/DP 1/28379
NCC Class* 1a
Type New

Plans

Main Plan
Prepared by

Construction and environment

Assessed floor area (m²)*		Exposure Type
Conditioned*	92.9	Suburban
Unconditioned*	11.7	NatHERS climate zone
Total	104.6	56 - Mascot AMO
Garage	0.0	



Accredited assessor

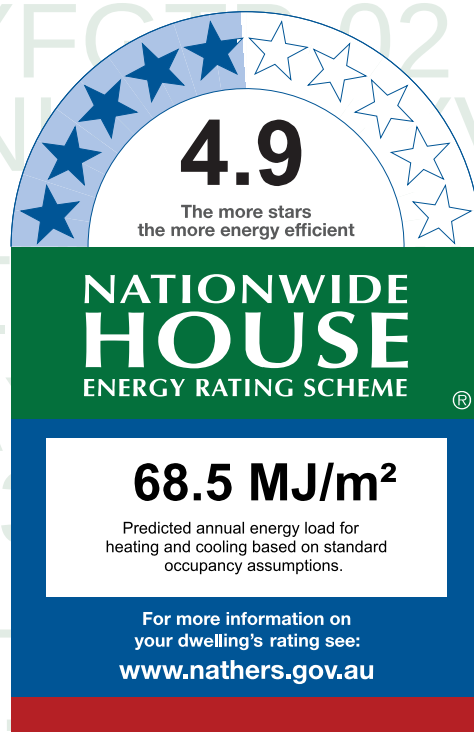
Name Haylea Edwards
Business name Efficient Living Pty Ltd
Email haylea@efficientliving.com.au
Phone +61 9970 6181
Accreditation No. DMN/17/1817
Assessor Accrediting Organisation DMN
Declaration of interest No Conflict of Interest

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.

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



Thermal Performance

Heating	Cooling
44.9	23.7
MJ/m²	MJ/m²

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 <http://www.hero-software.com.au/pdf/HR-LYFGTP-02>. When using either link, ensure you are visiting <http://www.hero-software.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?

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?

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
ALM-004-04 A	Aluminium B DG Air Fill Low Solar Gain low-E -Clear	4.90	0.33	0.31	0.35
CMP-004-04 I	Composite B DG Air Fill Low Solar Gain low-E -Clear	3.40	0.33	0.31	0.35
CMP-005-04 I	Composite A DG Argon Fill Low Solar Gain low-E -Clear	2.20	0.32	0.30	0.34
CMP-006-04 I	Composite B DG Argon Fill Low Solar Gain low-E -Clear	2.23	0.39	0.37	0.41

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BATHROOM	CMP-004-04 I	W15	2500	763	Fixed	0	E	None
BATHROOM	ALM-004-04 A	W15	2500	804	Louvre	90	E	None
BEDROOM 1	CMP-005-04 I	D3	2500	4345	Bi-fold	90	N	None
BEDROOM 1	CMP-004-04 I	W16	2500	789	Fixed	0	E	None
BEDROOM 1	ALM-004-04 A	W16	2500	735	Louvre	90	E	None
BEDROOM 1	CMP-004-04 I	W16	2500	775	Fixed	0	E	None
BEDROOM 2	ALM-004-04 A	W14	2500	699	Louvre	90	WNW	None
BEDROOM 2	CMP-005-04 I	D5	2500	2400	Bi-fold	90	NNE	None
LAUNDRY	CMP-005-04 I	W12	1800	900	Awning	90	E	None
LAUNDRY	CMP-005-04 I	W11	1800	900	Awning	90	S	None
LIVING ROOM	CMP-005-04 I	W10	2700	2300	Awning	30	SSW	None
LIVING ROOM	ALM-004-04 A	W9	2700	900	Louvre	90	SSW	None
LIVING ROOM	CMP-006-04 I	D2	2700	3898	Sliding	60	NNE	None
LIVING ROOM	CMP-004-04 I	W6	2500	969	Fixed	0	NNE	None
LIVING ROOM	CMP-006-04 I	D1	2700	4500	Sliding	60	N	None
LIVING ROOM	CMP-005-04 I	W13	1800	900	Awning	90	E	None
LIVING ROOM	CMP-005-04 I	W7	2700	4400	Awning	20	WNW	None
LIVING ROOM	CMP-004-04 I	W8	2700	928	Fixed	0	SSW	None
Tv Room	CMP-005-04 I	D4	2500	1620	Bi-fold	90	N	None

Roof window *type and performance value*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
None					

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
None								

Skylight type and performance

Skylight ID	Skylight description
None	

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
LIVING ROOM	2040	870	90	S

External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
MC-REFL-CAV	Metal Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	2.50	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATHROOM	MC-REFL-CAV	2500	1600	E		Yes
BATHROOM	MC-REFL-CAV	2500	3500	S	5229	Yes
BEDROOM 1	MC-REFL-CAV	2500	5101	N	478	Yes
BEDROOM 1	MC-REFL-CAV	2500	3101	E		Yes
BEDROOM 2	MC-REFL-CAV	2500	3698	WNW		Yes
BEDROOM 2	MC-REFL-CAV	2500	2990	NNE	479	Yes
BEDROOM 2	MC-REFL-CAV	2500	1957	SSW		Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
LAUNDRY	MC-REFL-CAV	2700	1540	E		Yes
LAUNDRY	MC-REFL-CAV	2700	3979	S		Yes
LIVING ROOM	MC-REFL-CAV	2700	632	S		Yes
LIVING ROOM	MC-REFL-CAV	2700	2733	SSW	1062	Yes
LIVING ROOM	MC-REFL-CAV	2700	1320	S	1127	Yes
LIVING ROOM	MC-REFL-CAV	2700	571	W	1232	Yes
LIVING ROOM	MC-REFL-CAV	2700	1343	SSW	1073	Yes
LIVING ROOM	MC-REFL-CAV	2700	5321	NNE	2964	Yes
LIVING ROOM	MC-REFL-CAV	2700	5101	N	2147	Yes
LIVING ROOM	MC-REFL-CAV	2700	3550	E		Yes
LIVING ROOM	MC-REFL-CAV	2700	4587	WNW	600	Yes
LIVING ROOM	MC-REFL-CAV	2700	2194	SSW	1073	Yes
Living 2	MC-REFL-CAV	2500	990	SSW		Yes
Living 2	MC-REFL-CAV	2500	4600	WNW		Yes
Living 2	MC-REFL-CAV	2500	3624	ESE	10006	Yes
Tv Room	MC-REFL-CAV	2500	673	NNE	498	Yes
Tv Room	MC-REFL-CAV	2500	1700	N	478	Yes
Tv Room	MC-REFL-CAV	2500	1511	S	5229	Yes
Tv Room	MC-REFL-CAV	2500	600	W	2532	Yes
Tv Room	MC-REFL-CAV	2500	2949	S	4527	Yes
Tv Room	MC-REFL-CAV	2500	497	ESE	2116	Yes
Tv Room	MC-REFL-CAV	2500	1250	SSW	3509	Yes

Internal wall *type*

Wall ID	Wall Type	Area (m ²)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	25.4	2.50
INT-PB	Internal Plasterboard Stud Wall	22.6	0.00

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATHROOM	TIMB-002: Suspended Timber Floor - Lined Below	5.6	N/A	4.00	Tile
BEDROOM 1	TIMB-002: Suspended Timber Floor - Lined Below	15.8	N/A	4.00	Carpet
BEDROOM 2	TIMB-002: Suspended Timber Floor - Lined Below	11.1	N/A	4.00	Carpet
LAUNDRY	TIMB-002: Suspended Timber Floor - Lined Below	6.1	N/A	4.00	Tile
LIVING ROOM	TIMB-001: Suspended Timber Floor	1.6	N/A	0.15	Timber
LIVING ROOM	TIMB-002: Suspended Timber Floor - Lined Below	47.4	N/A	4.00	Timber
Living 2	TIMB-002: Suspended Timber Floor - Lined Below	4.5	N/A	4.00	Timber
Tv Room	TIMB-002: Suspended Timber Floor - Lined Below	16.8	N/A	4.00	Carpet

Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATHROOM	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	4.00	Yes
BEDROOM 1	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	4.00	Yes
BEDROOM 2	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	4.00	Yes
LAUNDRY	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	4.00	Yes
LIVING ROOM	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	4.00	Yes
Living 2	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	4.00	Yes
Tv Room	FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	4.00	Yes

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BATHROOM	1	Downlight	250	Sealed
BATHROOM	1	Exhaust Fan	300	Sealed
BEDROOM 1	2	Downlight	250	Sealed
BEDROOM 2	2	Downlight	250	Sealed
LAUNDRY	1	Downlight	250	Sealed
LAUNDRY	1	Exhaust Fan	300	Sealed

* Refer to glossary.

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
LIVING ROOM	6	Downlight	250	Sealed
LIVING ROOM	1	Exhaust Fan	300	Sealed
Living 2	1	Downlight	250	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
BEDROOM 1	1	1300
BEDROOM 2	1	1300
LIVING ROOM	1	1300
Tv Room	1	1300

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-03: Flat Framed / Skillion Tile Roof & Flat PB Ceiling	0.00	0.50	Medium

* Refer to glossary.

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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	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.
Ceiling penetrations	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.
Conditioned	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.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	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.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	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).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	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 www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	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 www.nathers.gov.au
Reflective wrap (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.
Roof window	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.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	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.
Skylight (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.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	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[®]Certificate

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

Single Dwelling

Certificate number: 1348527S_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 10/09/2020 published by the Department. This document is available at www.basix.nsw.gov.au

This certificate is a revision of certificate number 1348527S lodged with the consent authority or certifier on 31 October 2022 with application 1348527S.

It is the responsibility of the applicant to verify with the consent authority that the original, or any revised certificate, complies with the requirements of Schedule 1 Clause 2A, 4A or 6A of the Environmental Planning and Assessment Regulation 2000

Secretary

Date of issue: Friday, 04 November 2022

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



Planning,
Industry &
Environment

Project summary

Project name	13 Ilya Avenue_02
Street address	13 Ilya Avenue Bayview 2104
Local Government Area	Northern Beaches Council
Plan type and plan number	deposited 28379
Lot no.	1
Section no.	-
Project type	separate dwelling house - secondary dwelling
No. of bedrooms	2

Project score

Water	✓ 45	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 92	Target 50

Certificate Prepared by

Name / Company Name: Efficient Living

ABN (if applicable): 82116346082

Description of project

Project address

Project name	13 Ilya Avenue_02
Street address	13 Ilya Avenue Bayview 2104
Local Government Area	Northern Beaches Council
Plan type and plan number	Deposited Plan 28379
Lot no.	1
Section no.	-

Project type

Project type	separate dwelling house - secondary dwelling
No. of bedrooms	2

Site details

Site area (m²)	4170
Roof area (m²)	120
Conditioned floor area (m2)	92.9
Unconditioned floor area (m2)	11.7
Total area of garden and lawn (m2)	10
Roof area (m2) of the existing dwelling	563
No. of bedrooms in the existing dwelling	3

Assessor details and thermal loads

Assessor number	DMN/17/1817
Certificate number	HR-LYFGTP-02
Climate zone	56
Area adjusted cooling load (MJ/m².year)	24
Area adjusted heating load (MJ/m².year)	45
Ceiling fan in at least one bedroom	Yes
Ceiling fan in at least one living room or other conditioned area	Yes

Project score

Water	✓ 45	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 92	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 (> 7.5 but <= 9 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 3 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 3 star in each bathroom in the development.		✓	
Alternative water			
Rainwater tank			
The applicant must install a rainwater tank of at least 3000 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: - all toilets in the development - at least one outdoor tap in the development (Note: NSW Health does not recommend that rainwater be used for human consumption in areas with potable water supply.)		✓ ✓	✓ ✓

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 show on the plans accompanying the development application for the proposed development, the locations of ceiling fans set out in the Assessor Certificate. The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.	✓	✓	✓
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: 1-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: 1-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The cooling system must provide for day/night zoning between living areas and bedrooms.		✓	✓
Heating system			
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: 1-phase airconditioning; Energy rating: EER 3.5 - 4.0		✓	✓
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: 1-phase airconditioning; Energy rating: EER 3.5 - 4.0		✓	✓
The heating system must provide for day/night zoning between living areas and bedrooms.		✓	✓
Ventilation			
The applicant must install the following exhaust systems in the development: At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: manual switch on/off Kitchen: individual fan, ducted to façade or roof; Operation control: manual switch on/off Laundry: individual fan, ducted to façade or roof; Operation control: manual switch on/off		✓ ✓ ✓	✓ ✓ ✓
Artificial lighting			
The applicant must ensure that the "primary type of artificial lighting" is fluorescent or light emitting diode (LED) lighting in each of the following rooms, and where the word "dedicated" appears, the fittings for those lights must only be capable of accepting fluorescent or light emitting diode (LED) lamps: • at least 2 of the bedrooms / study; dedicated		✓	✓

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
• 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.			
The applicant must install a window and/or skylight in 1 bathroom(s)/toilet(s) in the development for natural lighting.			
Alternative energy			
The applicant must install a photovoltaic system with the capacity to generate at least 5 peak kilowatts of electricity as part of the development. The applicant must connect this system to the development's electrical system.			
Other			
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.