

NatHERS Thermal Comfort and BASIX Assessment

Proposed Dwellings: Units 1 & 2 at Lot B, 14 Raine Road, Padstow NSW 2211

Project Client: Allcastle Homes

For: Mr. B. Katbay

Job No.	Revision	Notes	Date
8058	A	NatHERS Thermal Comfort & BASIX Assessment – NCC 2022	06/05/2026
Thermal Comfort Specifications			
Glazing: Doors/windows	Manufacturer: Stegbar The following glazing may be substituted with other glazed windows or doors with a U-value that is equal to or lower than the value stated, and an SHGC +/-5% of the value stated. Given values are AFRC, total window system values (glass and frame). Timber framed door with single clear glazing: Front Entry Door: TIM-001-01: U-Value: 5.40 SHGC: 0.56 Single glazed standard clear glazing with aluminium frames to: Units 1 & 2: Bath: Sliding window: STG-007-003: U-Value: 6.3 SHGC: 0.71 Single glazed low-e (Comfort Plus) glazing with aluminium frames to: Unit 1: Study, Bed 2, Ensuite, and Bed 1: Unit 2: Throughout excluding Bath: Sliding windows: STG-007-007: U-Value: 4.5 SHGC: 0.45 Awning windows: STG-002-007: U-Value: 4.9 SHGC: 0.41 Sliding door: STG-005-006: U-Value: 4.4 SHGC: 0.45 Double glazed low-e with aluminium frames to: Unit 1: Family, Dining, Bed 3, and Bed 4: Sliding windows: STG-006-300: U-Value: 3.1 SHGC: 0.41 Sliding door: STG-076-305: U-Value: 2.9 SHGC: 0.41		
Roof	Metal roof with R1.3 anticon blanket (insulation only value) Colour: Medium (0.475<SA<0.7)		
Ceiling	Units 1 & 2: Plasterboard ceiling with R6.0 insulation (insulation only value) where roof above Units 1 & 2: R2.0 insulation (insulation only value) to Garage ceiling joists where habitable rooms above (between levels)		
Ceiling penetrations	Sealed LED downlights to Ground Floor, modelled; One per 5m² Exhaust fans to Kitchen and Laundry		
Ceiling fans	Units 1 & 2: One ceiling fan to Family or Dining		
External Walls	Units 1 & 2: Brick veneer and lightweight cladding with R2.7 insulation (insulation only value) No insulation required to external Garage walls Default Medium colour modelled (0.475<SA<0.7)		
Internal walls	Plasterboard on studs Units 1 & 2: R2.0 insulation (insulation only value) to the internal walls of the Garage and Bath		
Common wall	Shaftliner partiwall with lightweight framing and plasterboard lined with R2.0 insulation each side of shaftliner		
Floors	Waffle pod concrete slab Timber framed to first floor (between levels) Unit 1: R2.0 insulation (insulation only value) to the suspended floor of Bed 3 where open to air beneath Floor coverings: Tiles to wet areas; Hybrid timber to Ground Floor; Carpet to First Floor. Garage floor is bare.		
External Shading	Covered Porch, Balcony, and Alfresco; Eaves as per stamped plans		
BASIX Water Commitments			
Fixtures	Install showerheads minimum rating of 4 stars (>6.0 and <= 7.5 Litres/min) Install toilet flushing system with a minimum rating of 4 stars in each toilet Install tap with minimum rating of 4 stars in the kitchen Install taps with minimum rating of 6 stars in each bathroom		
Alternative Water	Install rainwater tank with minimum 2,000L capacity to each Unit, connected to – At least one outdoor tap, laundry, and toilets Rainwater harvest collected from a minimum 60m² roof area for each unit.		
BASIX Energy Commitments			
Hot water System	Electric Heat Pump: minimum performance of 21-25 STCs		
Cooling system	1-phase air conditioning to living areas and bedrooms: EER 3.0-3.5		
Heating system	1-phase air conditioning to living areas and bedrooms: EER 3.0-3.5		
Ventilation	Kitchen: Individual fan, externally ducted to façade, manual on/off switch Bathroom: Natural ventilation Laundry: Individual fan, externally ducted to façade, switch interlocked to light (with powder room in Laundry)		
Other	Electric cooktop & electric oven Outdoor clothes drying line Alternative Energy: Minimum 2.0kW of Solar/Photo Voltaics to each Unit (South orientation nominated as worst-case scenario)		

Nationwide House Energy Rating Scheme®

Multiple Class 1 dwellings Summary

NatHERS® Certificate No. 0012969910

Generated on 06 May 2026 using BERS Pro v5.2.6 (3.23)

Property

Address 14 14 Raine Road,
Padstow , NSW , 2211

Lot/DP Lot B DP 406606

NatHERS Climate Zone 56 Mascot (Sydney Airport)



Accredited assessor

Name Danielle Grumont

Business name Green Future Group Pty Ltd

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Phone 0412 957 655

Accreditation No. HERA10134

Assessor Accrediting Organisation
HERA



Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=eMVbdcBZW. When using either link, ensure you are visiting hstar.com.au



National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) [MJ/m ² /p.a.]	Cooling load (load limit) [MJ/m ² /p.a.]	Total load [MJ/m ² /p.a.]	Star Rating	Whole of Home Rating
0012969895	1	19.9 (N/A)	10.1 (N/A)	30.0	7	0
0012969903	2	18.1 (N/A)	11.8 (N/A)	29.9	7	0

Explanatory notes

About this ratings

Individual unit ratings are listed in the 'Summary of all dwellings' section of this Certificate.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the energy loads and societal cost. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy production and storage to estimate the homes societal cost .

For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

For high quality NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Licensed assessors in the Australian Capital Territory (ACT) can produce assessments for regulatory purposes only, using endorsed software, as listed on the ACT licensing register.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in certificates is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy use, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions 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.

Nationwide House Energy Rating Scheme®

NatHERS® Certificate No. 0012969895

Generated on 06 May 2026 using BERS Pro v5.2.6 (3.23)

Property

Address Unit 1, 14 14 Raine Road,
Padstow , NSW , 2211
Lot/DP Lot B DP 406606
NCC class* 1a
Floor/all Floors G of 2 floors
Type New Home

Plans

Main plan 8058
Prepared by Allcastle Homes

Construction and environment

Assessed floor area [m²]*	Exposure type
Conditioned* 118.8	Suburban
Unconditioned* 6.1	NatHERS climate zone
Total 141.9	56 Mascot (Sydney Airport)
Garage 17.0	



Accredited assessor

Name Danielle Grumont
Business name Green Future Group Pty Ltd
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Phone 0412 957 655
Accreditation No. HERA10134
Assessor Accrediting Organisation
HERA
Declaration of interest Declaration completed: no conflicts

NCC Requirements

NCC provisions Volume Two
Strate/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

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Thermal performance star rating



**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME®

30.0 MJ/m²

Predicted annual energy load for heating and cooling based on standard occupancy assumptions and NatHERS area adjustment.

For more information on your dwelling's rating see:
www.nathers.gov.au

Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022
Area adjustment included

	Heating	Cooling
Modelled	19.9	10.1
Load limits	N/A	N/A

Features determining load limits

	CSOG
Floor Type (lowest conditioned area)	No
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=YaUrIKHE. When using either link, ensure you are visiting hstar.com.au



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump, cooking, plug-in loads and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard 2025: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting Options:

Floor Type:

CSOG – Concrete Slab on Ground
SF – Suspended Floor (or a mixture of CSOG and SF)
NA – Not Applicable

NCC Climate Zone 1 or 2:

Yes
No
NA – Not Applicable

Outdoor Living Area:

Yes
No
NA – Not Applicable

Outdoor Living Area Ceiling Fan:

Yes
No
NA – Not Applicable



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Energy use

No Whole of Home performance assessment conducted for this certificate

Greenhouse gas emissions

No Whole of Home performance assessment conducted for this certificate

Cost

No Whole of Home performance assessment conducted for this certificate



Certificate check

The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.

	Approval Stage		Construction Stage		Occupancy/Other
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Floor type' table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown	☐	☐	☐	☐	☐



Certificate check

Continued

	Approval Stage		Construction Stage		
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging

Does the dwelling meet the NCC requirement for thermal bridging?

☐ ☐ ☐ ☐

Insulation installation method

Has the insulation been installed according to the NCC requirements?

☐ ☐ ☐

Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?

☐ ☐ ☐ ☐

Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)

Appliances

Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Additional NCC Requirements for Services (not included in the NatHERS assessment)

Does the lighting meet the artificial lighting requirements specified in the NCC?

☐ ☐ ☐ ☐

Does the hot water system meet the additional requirements specified in the NCC?

☐ ☐ ☐ ☐

Provisional values* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?

☐ ☐ ☐ ☐

Other NCC requirements

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

One sealed downlight modelled per 5m2 to Ground Floor only.

Default Medium roof and wall colours modelled as per NatHERS Tech Note.

Ceiling fans modelled at 1,200mm diameter (software limitation) this is a minimum requirement and larger ones can be

installed.

Room schedule

Room	Zone Type	Area [m ²]
Garage 1	Garage	16.99
WIP	Daytime	1.55
Study/HallStair	Daytime	17.51
Laundry	Daytime	5.59
Kitch/Fam/Dine	Kitchen/Living	30.08
Bedroom 1	Bedroom	15.2
Ensuite	Nighttime	4.11
Bedroom 2	Bedroom	10.81
Bath	Unconditioned	6.06
Bedroom 3	Bedroom	9.1
Bedroom 4	Bedroom	9.33
WIR	Nighttime	3.76
HallStair First	Daytime	13.96

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
TIM-001-01 W	Timber A SG Clear	5.4	0.56	0.53	0.59

Custom windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
STG-002-007	Aluminium Awning Window SG 6.38CPNtl	4.9	0.41	0.38	0.43
STG-006-300	Aluminium Sliding Window DG 4PbAS2/12Ar/4PbG	3.1	0.41	0.39	0.43
STG-076-305	Aluminium Sliding Door DG 4PbAs2/10Ar/4PbG	2.8	0.41	0.39	0.43
STG-007-007	Aluminium Sliding Window SG 6.38CPNtl	4.5	0.45	0.42	0.47
STG-007-003	Aluminium Sliding Window SG 5Clr	6.3	0.71	0.67	0.74



Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Study/HallStair	TIM-001-01 W	W1	2340	1200	Casement	90	SE	No
Study/HallStair	STG-002-007-001 W2	W2	2100	1000	Awning	90	SE	No
Kitch/Fam/Dine	STG-006-300-002 W3	W3	1800	1800	Sliding	30	SW	No
Kitch/Fam/Dine	STG-076-305-001 W4	W4	2400	3200	Sliding	60	NW	No
Bedroom 1	STG-007-007-001 W11	W11	900	2100	Sliding	10	NW	No
Ensuite	STG-007-007-001 W10	W10	600	600	Sliding	45	NW	No
Bedroom 2	STG-007-007-001 W9	W9	1200	1500	Sliding	10	SW	No
Bath	STG-007-003-001 W8	W8	900	600	Sliding	45	SW	No
Bedroom 3	STG-076-305-001 W5	W5	2000	2300	Sliding	60	SE	No
Bedroom 3	STG-006-300-002 W7	W7	600	1500	Sliding	10	SW	No
Bedroom 4	STG-076-305-001 W6	W6	2000	2300	Sliding	60	SE	No

Roof window* *type and performance value*

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 shaft reflectance
No Data Available		



Skylight* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m ²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Garage 1	2150	2350	90	SE

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
EW-1	Single Skin Brick	0.50		No insulation	No
EW-2	Timber Stud Frame Brick Veneer	0.50		No insulation	No
EW-3	Timber Stud Frame Brick Veneer	0.50		Bulk Insulation R2.7	No
EW-4	Fibro Timber Stud Frame Panel Direct Fix	0.50		Bulk Insulation R2.7	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Garage 1	EW-1	2815	3050	SE	2150	No
Garage 1	EW-1	2815	5550	SW	50	No
Garage 1	EW-2	2815	300	NW	50	No
WIP	EW-3	2740	1050	SW	50	No
Study/HallStair	EW-3	2740	3150	SE	1650	No
Study/HallStair	EW-3	2740	950	SW	3100	No
Kitch/Fam/Dine	EW-3	2740	5000	SW	50	No
Kitch/Fam/Dine	EW-3	2740	5900	NW	4200	No
Bedroom 1	EW-4	2440	3100	NW	750	No
Ensuite	EW-4	2440	1500	SW	750	No
Ensuite	EW-4	2440	2800	NW	750	No
Bedroom 2	EW-4	2440	3700	SW	750	No
Bath	EW-4	2440	3750	SW	750	No



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bedroom 3	EW-4	2440	2750	SE	1350	No
Bedroom 3	EW-4	2440	3600	SW	750	No
Bedroom 4	EW-4	2440	3150	SE	1350	No

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation [R-value]
IW-001	Timber Stud Frame, Direct Fix Plasterboard	38.00	Bulk Insulation, No Air Gap R2
IW-002	Timber Stud Frame, Direct Fix Plasterboard	91.81	No insulation
IW-003	Shaft liner party wall with plaster	51.04	Bulk Insulation both sides of shaft liner R2

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Insulation [R-value]	Slab edge insulation [R-value]	Covering
Garage 1	Waffle pod slab 225 mm 100mm	16.96	None	Waffle Pod 225mm		Bare
WIP	Waffle pod slab 225 mm 100mm	1.55	None	Waffle Pod 225mm		Cork Tiles or Parquetry 8mm
Study/HallStair	Waffle pod slab 225 mm 100mm	17.51	None	Waffle Pod 225mm		Cork Tiles or Parquetry 8mm
Laundry	Waffle pod slab 225 mm 100mm	5.59	None	Waffle Pod 225mm		Ceramic Tiles 8mm
Kitch/Fam/Dine	Waffle pod slab 225 mm 100mm	30.08	None	Waffle Pod 225mm		Cork Tiles or Parquetry 8mm
Bedroom 1 / Study/HallStair	Timber Framed Timber Above Plasterboard 19mm	0.65		No Insulation		Carpet+Rubber Underlay 18mm
Bedroom 1 / Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard 19mm	14.35		No Insulation		Carpet+Rubber Underlay 18mm
Ensuite / Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard 19mm	4.11		No Insulation		Ceramic Tiles 8mm
Bedroom 2 / Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard 19mm	10.24		No Insulation		Carpet+Rubber Underlay 18mm
Bath / Garage 1	Timber Framed Timber Above Plasterboard 19mm	4.66		Bulk Insulation R2		Ceramic Tiles 8mm
Bath / WIP	Timber Framed Timber Above Plasterboard 19mm	1.05		No Insulation		Ceramic Tiles 8mm
Bedroom 3 / Garage 1	Timber Framed Timber Above Plasterboard 19mm	6.49		Bulk Insulation R2		Carpet+Rubber Underlay 18mm



Location	Construction	Area [m ²]	Sub-floor ventilation	Insulation [R-value]	Slab edge insulation [R-value]	Covering
Bedroom 3	Suspended Floor Timber Frame 19mm	2.45	Totally Open	Bulk Insulation in Contact with Floor R2		Carpet+Rubber Underlay 18mm
Bedroom 4 / Study/HallStair	Timber Framed Timber Above Plasterboard 19mm	9.32		No Insulation		Carpet+Rubber Underlay 18mm
WIR / Laundry	Timber Framed Timber Above Plasterboard 19mm	2.33		No Insulation		Carpet+Rubber Underlay 18mm
WIR / Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard 19mm	0.82		No Insulation		Carpet+Rubber Underlay 18mm
HallStair First / Garage 1	Timber Framed Timber Above Plasterboard 19mm	1.25		Bulk Insulation R2		Carpet+Rubber Underlay 18mm
HallStair First / Study/HallStair	Timber Framed Timber Above Plasterboard 19mm	4.56		No Insulation		Carpet+Rubber Underlay 18mm
HallStair First / Laundry	Timber Framed Timber Above Plasterboard 19mm	0.68		No Insulation		Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction material/type	Bulk insulation [R-value] (may include edge batt values)
Garage 1	Plasterboard on Timber	No insulation
Garage 1	Timber Framed Timber Above Plasterboard	Bulk Insulation R2
WIP	Plasterboard on Timber	Bulk Insulation R6
WIP	Timber Framed Timber Above Plasterboard	No Insulation
Study/HallStair	Plasterboard on Timber	Bulk Insulation R6
Study/HallStair	Timber Framed Timber Above Plasterboard	No Insulation
Laundry	Plasterboard on Timber	Bulk Insulation R6
Laundry	Timber Framed Timber Above Plasterboard	No Insulation
Kitch/Fam/Dine	Plasterboard on Timber	Bulk Insulation R6
Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard	No Insulation
Bedroom 1	Plasterboard on Timber	Bulk Insulation R6
Ensuite	Plasterboard on Timber	Bulk Insulation R6
Bedroom 2	Plasterboard on Timber	Bulk Insulation R6
Bath	Plasterboard on Timber	Bulk Insulation R6



Location	Construction material/type	Bulk insulation [R-value] (may include edge batt values)
Bedroom 3	Plasterboard on Timber	Bulk Insulation R6
Bedroom 4	Plasterboard on Timber	Bulk Insulation R6
WIR	Plasterboard on Timber	Bulk Insulation R6
HallStair First	Plasterboard on Timber	Bulk Insulation R6

Ceiling penetrations*

Location	Quantity	Type	Diameter [mm]	Sealed/unsealed
WIP	1	Downlights - LED	150	Sealed
Study/HallStair	4	Downlights - LED	150	Sealed
Laundry	2	Downlights - LED	150	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Kitch/Fam/Dine	7	Downlights - LED	150	Sealed
Kitch/Fam/Dine	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
Kitch/Fam/Dine	1	1200

Roof type

Construction	Insulation [R-value]	Reflective wrap* [yes/no]	Solar absorptance	Roof shade [colour]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, No Air Gap Above R1.3		0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)



Cooling system

Appliance/ system type	Location	Fuel type	Performance	Recommended capacity
No Data Available				

Heating system

Appliance/ system type	Location	Fuel type	Performance	Recommended capacity
No Data Available				

Hot water system

Appliance/ system type	Fuel type	Performance	Hot water CER* zone
No Data Available			

Lighting

Lighting power density [W/m ²] (default assumption 5W/m ²)
No Data Available

Cooking

Cooktop type	Oven type
No Data Available	

Pool/spa equipment

Appliance/ system type	Volume [Litres]	Star rating	Recommended pump capacity [W]
No Data Available			



Explanatory notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the home's energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
CER	Clean Energy Regulator
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your home's rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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	see exposure categories below.
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 – protected	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – suburban	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.
Modelled airtightness	the air permeability rate determined by software inputs when generating this rating. This is for informational purposes only and not suitable for assessing compliance.
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 .
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
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 features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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.
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.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER). NatHERS uses a 10-year STC.
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
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 attached to the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

Nationwide House Energy Rating Scheme®

NatHERS® Certificate No. 0012969903

Generated on 06 May 2026 using BERS Pro v5.2.6 (3.23)

Property

Address Unit 2, 14 14 Raine Road,
Padstow , NSW , 2211
Lot/DP Lot B DP 406606
NCC class* 1a
Floor/all Floors G of 2 floors
Type New Home

Plans

Main plan 8058
Prepared by Allcastle Homes

Construction and environment

Assessed floor area [m²]*	Exposure type
Conditioned* 118.8	Suburban
Unconditioned* 6.1	NatHERS climate zone
Total 141.9	56 Mascot (Sydney Airport)
Garage 17.0	



Accredited assessor

Name Danielle Grumont
Business name Green Future Group Pty Ltd
Email hello@greenfuturegroup.com.au
Phone 0412 957 655
Accreditation No. HERA10134
Assessor Accrediting Organisation
HERA
Declaration of interest Declaration completed: no conflicts

NCC Requirements

NCC provisions Volume Two
Strate/Territory variation Yes

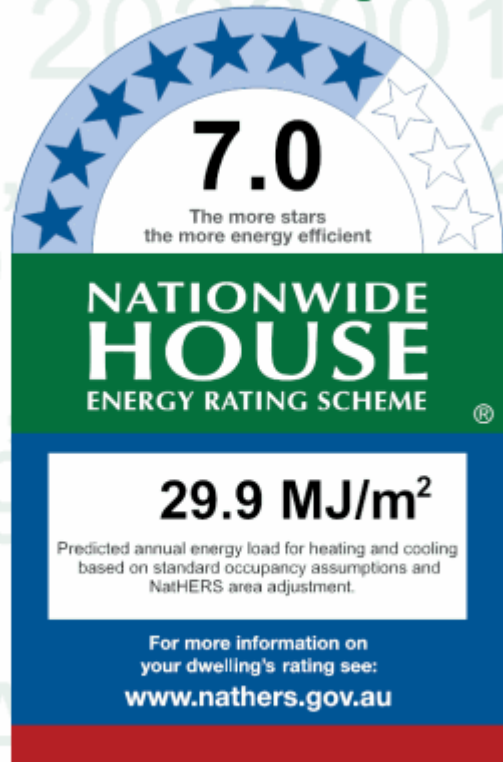
National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022
Area adjustment included

	Heating	Cooling
Modelled	18.1	11.8
Load limits	N/A	N/A

Features determining load limits

	CSOG
Floor Type (lowest conditioned area)	No
NCC climate zone 1 or 2	No
Outdoor living area	No
Outdoor living area ceiling fan	No

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate.

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=xKjgOsmhy. When using either link, ensure you are visiting hstar.com.au



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump, cooking, plug-in loads and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the *ABCB Standard 2025: NatHERS heating and cooling load limits* for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting Options:

Floor Type:

CSOG – Concrete Slab on Ground
SF – Suspended Floor (or a mixture of CSOG and SF)
NA – Not Applicable

NCC Climate Zone 1 or 2:

Yes
No
NA – Not Applicable

Outdoor Living Area:

Yes
No
NA – Not Applicable

Outdoor Living Area Ceiling Fan:

Yes
No
NA – Not Applicable



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

Predicted Whole of Home annual impact by appliance

Energy use

No Whole of Home performance assessment conducted for this certificate

Greenhouse gas emissions

No Whole of Home performance assessment conducted for this certificate

Cost

No Whole of Home performance assessment conducted for this certificate



Certificate check

The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and by whom each item should be checked. It is not mandatory to complete this checklist.

	Approval Stage		Construction Stage		Occupancy/Other
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Floor type' table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match what is shown	☐	☐	☐	☐	☐



Certificate check

Continued

	Approval Stage		Construction Stage		
	Assessor checked	Consent Authority/ Surveyor checked	Builder checked	Consent Authority Surveyor checked	Occupancy/Other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging

Does the dwelling meet the NCC requirement for thermal bridging?

☐ ☐ ☐ ☐

Insulation installation method

Has the insulation been installed according to the NCC requirements?

☐ ☐ ☐

Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?

☐ ☐ ☐ ☐

Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)

Appliances

Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Additional NCC Requirements for Services (not included in the NatHERS assessment)

Does the lighting meet the artificial lighting requirements specified in the NCC?

☐ ☐ ☐ ☐

Does the hot water system meet the additional requirements specified in the NCC?

☐ ☐ ☐ ☐

Provisional values* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?

☐ ☐ ☐ ☐

Other NCC requirements

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

One sealed downlight modelled per 5m2 to Ground Floor only.

Default Medium roof and wall colours modelled as per NatHERS Tech Note.

Ceiling fans modelled at 1,200mm diameter (software limitation) this is a minimum requirement and larger ones can be

installed.

Room schedule

Room	Zone Type	Area [m ²]
Garage 1	Garage	16.99
WIP	Daytime	1.55
Study/HallStair	Daytime	17.51
Laundry	Daytime	5.59
Kitch/Fam/Dine	Kitchen/Living	30.08
Bedroom 1	Bedroom	15.2
Ensuite	Nighttime	4.11
Bedroom 2	Bedroom	10.81
Bath	Unconditioned	6.06
Bedroom 3	Bedroom	9.1
Bedroom 4	Bedroom	9.33
WIR	Nighttime	3.76
HallStair First	Daytime	13.96

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
TIM-001-01 W	Timber A SG Clear	5.4	0.56	0.53	0.59

Custom windows*

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
STG-002-007	Aluminium Awning Window SG 6.38CPNtl	4.9	0.41	0.38	0.43
STG-005-006	Aluminium Sliding Door SG 6.38CPNtl	4.4	0.45	0.43	0.47
STG-007-007	Aluminium Sliding Window SG 6.38CPNtl	4.5	0.45	0.42	0.47
STG-007-003	Aluminium Sliding Window SG 5Clr	6.3	0.71	0.67	0.74



Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Study/HallStair	TIM-001-01 W	n/a	2340	1200	Casement	90	SE	No
Study/HallStair	STG-002-007-001	n/a	2100	1000	Awning	90	SE	No
Kitch/Fam/Dine	STG-005-006-001	n/a	2400	3200	Sliding	60	NW	No
Kitch/Fam/Dine	STG-007-007-001	n/a	1800	1800	Sliding	30	NE	No
Bedroom 1	STG-007-007-001	n/a	900	2100	Sliding	10	NW	No
Ensuite	STG-007-007-001	n/a	600	600	Sliding	45	NW	No
Bedroom 2	STG-007-007-001	n/a	1200	1500	Sliding	10	NE	No
Bath	STG-007-003-001 W12		900	600	Sliding	45	NE	No
Bedroom 3	STG-007-007-001	n/a	600	1500	Sliding	10	NE	No
Bedroom 3	STG-005-006-001	n/a	2000	2300	Sliding	60	SE	No
Bedroom 4	STG-005-006-001	n/a	2000	2300	Sliding	60	SE	No

Roof window* *type and performance value*

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 shaft reflectance
No Data Available		



Skylight* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m ²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Garage 1	2150	2350	90	SE

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
EW-1	Timber Stud Frame Brick Veneer	0.50		No insulation	No
EW-2	Single Skin Brick	0.50		No insulation	No
EW-3	Timber Stud Frame Brick Veneer	0.50		Bulk Insulation R2.7	No
EW-4	Fibro Timber Stud Frame Panel Direct Fix	0.50		Bulk Insulation R2.7	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Garage 1	EW-1	2815	300	NW	50	No
Garage 1	EW-2	2815	5550	NE	50	No
Garage 1	EW-2	2815	3050	SE	2150	No
WIP	EW-3	2740	1050	NE	50	No
Study/HallStair	EW-3	2740	950	NE	3100	No
Study/HallStair	EW-3	2740	3150	SE	1650	No
Kitch/Fam/Dine	EW-3	2740	5900	NW	4200	No
Kitch/Fam/Dine	EW-3	2740	5000	NE	50	No
Bedroom 1	EW-4	2440	3100	NW	750	No
Ensuite	EW-4	2440	2800	NW	750	No
Ensuite	EW-4	2440	1500	NE	750	No
Bedroom 2	EW-4	2440	3700	NE	750	No
Bath	EW-4	2440	3750	NE	750	No



Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature [yes/no]
Bedroom 3	EW-4	2440	3600	NE	750	No
Bedroom 3	EW-4	2440	2750	SE	1317	No
Bedroom 4	EW-4	2440	3150	SE	1333	No

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation [R-value]
IW-001	Timber Stud Frame, Direct Fix Plasterboard	26.08	Bulk Insulation, No Air Gap R2
IW-002	Timber Stud Frame, Direct Fix Plasterboard	94.41	No insulation
IW-003	Shaft liner party wall with plaster	51.04	Bulk Insulation both sides of shaft liner R2

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Insulation [R-value]	Slab edge insulation [R-value]	Covering
Garage 1	Waffle pod slab 225 mm 100mm	16.87	None	Waffle Pod 225mm		Bare
WIP	Waffle pod slab 225 mm 100mm	1.55	None	Waffle Pod 225mm		Cork Tiles or Parquetry 8mm
Study/HallStair	Waffle pod slab 225 mm 100mm	17.51	None	Waffle Pod 225mm		Cork Tiles or Parquetry 8mm
Laundry	Waffle pod slab 225 mm 100mm	5.59	None	Waffle Pod 225mm		Ceramic Tiles 8mm
Kitch/Fam/Dine	Waffle pod slab 225 mm 100mm	30.08	None	Waffle Pod 225mm		Cork Tiles or Parquetry 8mm
Bedroom 1 / Study/HallStair	Timber Framed Timber Above Plasterboard 19mm	0.65		No Insulation		Carpet+Rubber Underlay 18mm
Bedroom 1 / Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard 19mm	14.35		No Insulation		Carpet+Rubber Underlay 18mm
Ensuite / Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard 19mm	4.11		No Insulation		Ceramic Tiles 8mm
Bedroom 2 / Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard 19mm	10.24		No Insulation		Carpet+Rubber Underlay 18mm
Bath / Garage 1	Timber Framed Timber Above Plasterboard 19mm	4.66		Bulk Insulation R2		Ceramic Tiles 8mm
Bath / WIP	Timber Framed Timber Above Plasterboard 19mm	1.05		No Insulation		Ceramic Tiles 8mm
Bedroom 3 / Garage 1	Timber Framed Timber Above Plasterboard 19mm	6.48		Bulk Insulation R2		Carpet+Rubber Underlay 18mm



Location	Construction	Area [m ²]	Sub-floor ventilation	Insulation [R-value]	Slab edge insulation [R-value]	Covering
Bedroom 3	Suspended Floor Timber Frame 19mm	2.45	Totally Open	No Insulation		Carpet+Rubber Underlay 18mm
Bedroom 4 / Study/HallStair	Timber Framed Timber Above Plasterboard 19mm	9.33		No Insulation		Carpet+Rubber Underlay 18mm
WIR / Laundry	Timber Framed Timber Above Plasterboard 19mm	2.34		No Insulation		Carpet+Rubber Underlay 18mm
WIR / Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard 19mm	0.82		No Insulation		Carpet+Rubber Underlay 18mm
HallStair First / Garage 1	Timber Framed Timber Above Plasterboard 19mm	1.27		Bulk Insulation R2		Carpet+Rubber Underlay 18mm
HallStair First / Study/HallStair	Timber Framed Timber Above Plasterboard 19mm	4.56		No Insulation		Carpet+Rubber Underlay 18mm
HallStair First / Laundry	Timber Framed Timber Above Plasterboard 19mm	0.68		No Insulation		Carpet+Rubber Underlay 18mm

Ceiling type

Location	Construction material/type	Bulk insulation [R-value] (may include edge batt values)
Garage 1	Plasterboard on Timber	No insulation
Garage 1	Timber Framed Timber Above Plasterboard	Bulk Insulation R2
WIP	Plasterboard on Timber	Bulk Insulation R6
WIP	Timber Framed Timber Above Plasterboard	No Insulation
Study/HallStair	Plasterboard on Timber	Bulk Insulation R6
Study/HallStair	Timber Framed Timber Above Plasterboard	No Insulation
Laundry	Plasterboard on Timber	Bulk Insulation R6
Laundry	Timber Framed Timber Above Plasterboard	No Insulation
Kitch/Fam/Dine	Plasterboard on Timber	Bulk Insulation R6
Kitch/Fam/Dine	Timber Framed Timber Above Plasterboard	No Insulation
Bedroom 1	Plasterboard on Timber	Bulk Insulation R6
Ensuite	Plasterboard on Timber	Bulk Insulation R6
Bedroom 2	Plasterboard on Timber	Bulk Insulation R6
Bath	Plasterboard on Timber	Bulk Insulation R6



Location	Construction material/type	Bulk insulation [R-value] (may include edge batt values)
Bedroom 3	Plasterboard on Timber	Bulk Insulation R6
Bedroom 4	Plasterboard on Timber	Bulk Insulation R6
WIR	Plasterboard on Timber	Bulk Insulation R6
HallStair First	Plasterboard on Timber	Bulk Insulation R6

Ceiling penetrations*

Location	Quantity	Type	Diameter [mm]	Sealed/unsealed
WIP	1	Downlights - LED	150	Sealed
Study/HallStair	4	Downlights - LED	150	Sealed
Laundry	2	Downlights - LED	150	Sealed
Laundry	1	Exhaust Fans	300	Sealed
Kitch/Fam/Dine	7	Downlights - LED	150	Sealed
Kitch/Fam/Dine	1	Exhaust Fans	300	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
Kitch/Fam/Dine	1	1200

Roof type

Construction	Insulation [R-value]	Reflective wrap* [yes/no]	Solar absorptance	Roof shade [colour]
Corrugated Iron Timber Frame	Bulk, Reflective Side Down, No Air Gap Above R1.3		0.50	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)



Cooling system

Appliance/ system type	Location	Fuel type	Performance	Recommended capacity
No Data Available				

Heating system

Appliance/ system type	Location	Fuel type	Performance	Recommended capacity
No Data Available				

Hot water system

Appliance/ system type	Fuel type	Performance	Hot water CER* zone
No Data Available			

Lighting

Lighting power density [W/m ²] (default assumption 5W/m ²)
No Data Available

Cooking

Cooktop type	Oven type
No Data Available	

Pool/spa equipment

Appliance/ system type	Volume [Litres]	Star rating	Recommended pump capacity [W]
No Data Available			



Explanatory notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the home's energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary.

Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and

are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
CER	Clean Energy Regulator
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your home's rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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	see exposure categories below.
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 – protected	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – suburban	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.
Modelled airtightness	the air permeability rate determined by software inputs when generating this rating. This is for informational purposes only and not suitable for assessing compliance.
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 .
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
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 features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
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.
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.
STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulator (CER). NatHERS uses a 10-year STC.
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick or continuous thermal breaks such as polystyrene insulation sheeting or plastic strips
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 attached to the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

BASIX™ Certificate

Building Sustainability Index

www.planningportal.nsw.gov.au/development-and-assessment/basix

Multi Dwelling

Certificate number: 1845116M

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.planningportal.nsw.gov.au/definitions

Secretary

Date of issue: Wednesday, 06 May 2026

To be valid, this certificate must be submitted with a development application or lodged with a complying development certificate application within 3 months of the date of issue.



When submitting this BASIX certificate with a development application or complying development certificate application, it must be accompanied by NatHERS certificate 0012969910.

Project summary

Project name	14 Raine Road, PADSTOW
Street address	14 RAINE ROAD PADSTOW 2211
Local Government Area	CANTERBURY-BANKSTOWN
Plan type and plan number	Deposited Plan 406606
Lot No.	B
Section no.	-
No. of residential flat buildings	0
Residential flat buildings: no. of dwellings	0
Multi-dwelling housing: no. of dwellings	2
No. of single dwelling houses	0

Project score

Water	✓ 43	Target 40
Thermal Performance (Simulation method)	✓ Pass	Target Pass
Energy	✓ 89	Target 72
Materials	✓ -28	Target n/a

Certificate Prepared by

Name / Company Name: Green Future Group Pty Ltd

ABN (if applicable): 55656040078

Description of project

Project address	
Project name	14 Raine Road, PADSTOW
Street address	14 RAINE ROAD PADSTOW 2211
Local Government Area	CANTERBURY-BANKSTOWN
Plan type and plan number	Deposited Plan 406606
Lot No.	B
Section no.	-
Project type	
No. of residential flat buildings	0
Residential flat buildings: no. of dwellings	0
Multi-dwelling housing: no. of dwellings	2
No. of single dwelling houses	0
Site details	
Site area (m²)	636
Roof area (m²)	226
Non-residential floor area (m²)	0
Residential car spaces	2
Non-residential car spaces	0

Common area landscape		
Common area lawn (m²)	0	
Common area garden (m²)	0	
Area of indigenous or low water use species (m²)	0	
Assessor details and thermal loads		
Assessor number	HERA10134	
Certificate number	0012969910	
Climate zone	56	
Project score		
Water	✓ 43	Target 40
Thermal Performance (Simulation method)	✓ Pass	Target Pass
Energy	✓ 89	Target 72
Materials	✓ -28	Target n/a

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 (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
1	4+	119	6	150	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
2	4+	119	6	247	0

No common areas specified.

Schedule of BASIX commitments

1. Commitments for multi-dwelling housing

(a) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Performance and Materials

2. Commitments for single dwelling houses

(a) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Performance and Materials

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

(b) Common areas and central systems/facilities

- (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 housing

(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	4 star	6 star	-	-	-	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
All dwellings	Individual water tank (No. 1)	Tank size (min) 2000 liters	To collect run-off from at least: 60 square metres of roof area; 0 square metres of impervious area; 0 square metres of garden and lawn area; and 0 square metres of planter box area.	yes	yes	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.		✓	✓
(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.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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	heat pump - 21 to 25 STCs	no mechanical ventilation (ie natural)	-	individual fan, ducted to façade	manual switch on/off	individual fan, ducted to façade	interlocked to light

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
All dwellings	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	2	no

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

	Alternative energy	
Dwelling no.	PV System Panel Group 1 (peak kW/Slope/Orientation)	PV System Panel Group 2 (peak kW/Slope/Orientation)
All dwellings	2 / between >0° to <=10° degree to the horizontal / S	/ /

(iii) Thermal Performance and Materials	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.			
(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			

(iii) Thermal Performance and Materials	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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.	✓	✓	✓
(i) 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.	✓		
(j) 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.		✓	

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
1	19.9	10.1	30.000
All other dwellings	18.1	11.8	29.900

	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
All dwellings	56	3	-	17	no

	Floor types									
	Concrete slab on ground				Suspended floor above enclosed subfloor			Suspended floor above open subfloor		
Dwelling no.	Area (m ²)	Insulation	Low emissions option	Dematerialisation	Construction type	Area (m ²)	Insulation	Construction type	Area (m ²)	Insulation
All dwellings	56	-	-	waffle pod slab	-	-	-	particle board, frame: timber - H2 treated softwood	3	-

	Floor types										
	First floor above habitable rooms or mezzanine			Suspended floor above garage			Garage floor				
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Low emissions option	Dematerialisation
All dwellings	particle board, frame: timber - H2 treated softwood	49	-	particle board, frame: timber - H2 treated softwood	17	-	concrete slab on ground	17	-	-	waffle pod slab

	External walls								
	External wall type 1				External wall type 2				
Dwelling no.	Wall type	Area (m²)	Insulation	Low emissions option	Wall type	Area (m²)	Insulation	Low emissions option	
All dwellings	brick veneer, frame : timber - H2 treated softwood	28	rockwool batts, roll or pump-in	none	framed (fibre cement sheet or boards), frame : timber - H2 treated softwood	45	rockwool batts, roll or pump-in	none	

	External walls							
	External wall type 3				External wall type 4			
Dwelling no.	Wall type	Area (m²)	Insulation	Low emissions option	Wall type	Area (m²)	Insulation	Low emissions option
All dwellings	-	-	-	-	-	-	-	-

	Internal walls								
	Internal walls shared with garage			Internal wall type 1			Internal wall type 2		
Dwelling no.	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation	Wall type	Area (m²)	Insulation
All dwellings	plasterboard, frame: timber - H2 treated softwood	23	rockwool batts, roll or pump-in	plasterboard, frame: timber - H2 treated softwood	80	-	plasterboard, frame: timber - H2 treated softwood	48	rockwool batts, roll or pump-in

Ceiling and roof									
Flat ceiling / pitched roof				Raked ceiling / pitched or skillion roof			Flat ceiling / flat roof		
Dwelling no.	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation	Construction type	Area (m²)	Insulation
All dwellings	framed - metal roof, frame: timber - H2 treated softwood	113	Ceiling:rockwool batts, roll or pump-in,Roof: foil backed blanket	-	-	Ceiling:,Roof:	-	-	Ceiling:,Roof:

Glazing type								
Glazing type				Frame types				
Dwelling no.	Single glazing (m²)	Double glazing (m²)	Triple glazing (m²)	Aluminium frames (m²)	Timber frames (m²)	uPVC frames (m²)	Steel frames (m²)	Composite frames (m²)
1	10	21	-	29	2	-	-	-
All other dwellings	31	-	-	29	2	-	-	-

2. Commitments for single 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.	✓	✓	✓
(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.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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.		✓	✓
(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.	✓	✓	✓
(iii) Thermal Performance and Materials	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 Performance and Materials	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.	✓	✓	✓
(i) 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.	✓		
(j) 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.		✓	

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.	✓	✓	✓

Central energy systems	Type	Specification
Other	-	-

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).