efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 5, Lorikeet Grove, Warriewood NSW 2102**

Issue	File Ref	Description	Author	Date
A	#2401219	NatHERS Thermal Comfort and BASIX Assessment	JF/DR	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: **interlocked to light / timer off**

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-XTR5R0-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 5, Lorikeet Grove, Warriewood, NSW, 2102
Lot/DP	5/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	TL02/ LOT5-NM105600-12.11.2024
Prepared by	SEKISUI HOUSE SERVICE

Construction and environment

Assessed floor area (m²)*		**Exposure Type**
Conditioned*	154.3	Suburban
Unconditioned*	0.0	**NatHERS climate zone**
Total	187.1	56 - Mascot AMO
Garage	32.8	

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientlivingcom.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

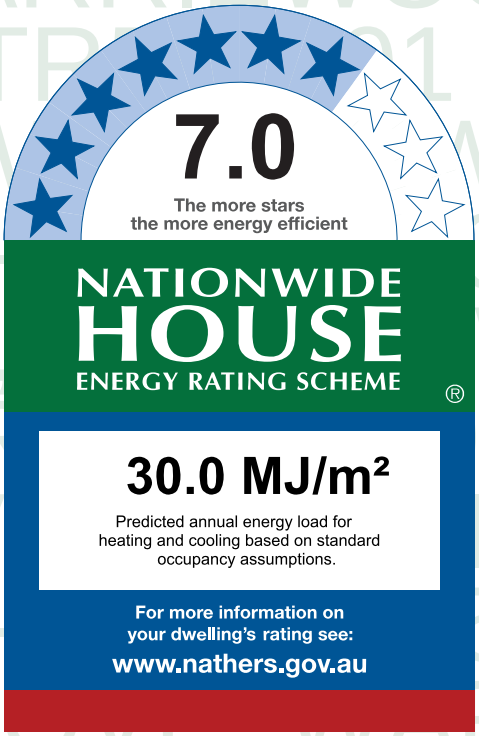
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

	Heating	Cooling
Modelled	16.8	13.2
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-XTR5R0-01. When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

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 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 and 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: 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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
garage	Garage	32.82
pdr	Day Time	1.78
linen	Day Time	5.18
entry	Day Time	12.91
KITCHEN/LIVING	Kitchen/Living	44.99
BED1	Bedroom	16.95
ens	Night Time	6.35
wir	Night Time	7.75
bath	Day Time	7.15
BED2	Bedroom	11.71
bed 3	Bedroom	10.51
BED4	Bedroom	10.51
HALLWAY FF	Day Time	23.81

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit

None

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-012	Horizon Awning Window	3.17	0.45	0.43	0.47
WID-102-028	Horizon Sliding Window	3.12	0.47	0.45	0.49
WID-106-028	Horizon Fixed Window	2.08	0.54	0.52	0.57
WID-111-005	Ascend Stacking Door	2.93	0.48	0.46	0.50
WID-124-029	Paragon Stacking Door	3.26	0.45	0.43	0.47

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BED1	WID-111-005	W05	2510	3576	Sliding Door	60	SW	None
BED2	WID-102-028	W08	1030	1810	Sliding	10	NW	None
BED4	WID-102-028	W10	1030	1810	Sliding	10	NE	None
HALLWAY FF	WID-106-028	W07	1030	1570	Fixed	0	NW	None
KITCHEN/LIVING	WID-124-029	W02	2660	3060	Sliding Door	60	NE	None
KITCHEN/LIVING	WID-124-029	W03	2660	2905	Sliding Door	45	NW	None
KITCHEN/LIVING	WID-101-012	W04	2050	1570	Awning	30	NE	None
bed 3	WID-102-028	W09	1030	1810	Sliding	10	NE	None
ens	WID-101-012	W06	1030	2410	Awning	42	NW	None
entry	WID-101-012	W01	2050	1570	Awning	30	NW	None

* Refer to glossary.

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
entry	2360	982	90	SW
garage	2265	4817	90	SW

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-A	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	0.00	Yes
Sekisui Nichiha Cladding Walls-B	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED1	Sekisui Nichiha Cladding Walls-B	1740	4690	SE		Yes
BED1	Sekisui Nichiha Cladding Walls-B	2510	4080	SW	3135	Yes
BED2	Sekisui Nichiha Cladding Walls-B	2510	3891	NW	435	Yes
BED4	Sekisui Nichiha Cladding Walls-B	2510	3630	NE	434	Yes
BED4	Sekisui Nichiha Cladding Walls-B	2510	3080	SE		Yes
HALLWAY FF	Sekisui Nichiha Cladding Walls-B	2510	1680	NW	435	Yes
HALLWAY FF	Sekisui Nichiha Cladding Walls-B	1740	3611	SE		Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	2660	4681	NW		Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	2660	3901	NE	2974	Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	2660	3000	NW	3877	Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	2660	3480	NE		Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	2660	3000	SE		No
bath	Sekisui Nichiha Cladding Walls-B	1740	2590	SE		Yes
bed 3	Sekisui Nichiha Cladding Walls-B	2510	3080	NW	435	Yes
bed 3	Sekisui Nichiha Cladding Walls-B	2510	3640	NE	434	Yes
ens	Sekisui Nichiha Cladding Walls-B	1740	3780	NW	419	Yes
ens	Sekisui Nichiha Cladding Walls-B	2510	1680	SW	3135	Yes
entry	Sekisui Nichiha Cladding Walls-B	2660	4980	NW		Yes
entry	Sekisui Nichiha Cladding Walls-B	2660	1381	SW	1774	Yes
garage	Sekisui Nichiha Cladding Walls-A	2660	5880	SW	1270	Yes
garage	Sekisui Nichiha Cladding Walls-A	2660	3001	NW	1523	Yes
wir	Sekisui Nichiha Cladding Walls-B	2510	1380	NW	435	Yes
wir	Sekisui Nichiha Cladding Walls-B	1740	1510	SW	7035	Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation

* Refer to glossary.

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	20.0	2.50
INT-PB	Internal Plasterboard Stud Wall	112.4	0.00
INT-PB-EXP1	Internal Plasterboard Stud Wall (exposed 1 side)	12.5	3.10
PARTIWALL	PARTIWALL	33.4	4.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED1	TIMB-001: Suspended Timber Floor	16.0	N/A	4.00	Carpet
BED1	TIMB-001: Suspended Timber Floor	1.0	N/A	0.15	Carpet
BED2	TIMB-001: Suspended Timber Floor	11.7	N/A	0.15	Carpet
BED4	TIMB-001: Suspended Timber Floor	10.2	N/A	0.15	Carpet
BED4	TIMB-002: Suspended Timber Floor - Lined Below	0.3	N/A	4.00	Carpet
HALLWAY FF	TIMB-001: Suspended Timber Floor	23.1	N/A	0.15	Carpet
HALLWAY FF	TIMB-002: Suspended Timber Floor - Lined Below	0.7	N/A	4.00	Carpet
KITCHEN/LIVING	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	45.0	N/A	0.59	Tile (8mm)
bath	TIMB-001: Suspended Timber Floor	7.1	N/A	0.15	Tile (8mm)
bed 3	TIMB-001: Suspended Timber Floor	0.3	N/A	0.15	Carpet
bed 3	TIMB-002: Suspended Timber Floor - Lined Below	10.2	N/A	4.00	Carpet
ens	TIMB-001: Suspended Timber Floor	6.4	N/A	4.00	Tile (8mm)
entry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	12.9	N/A	0.59	Tile (8mm)
garage	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	32.8	N/A	0.59	Exposed
linen	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	5.2	N/A	0.59	Tile (8mm)
pdr	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	1.8	N/A	0.59	Tile (8mm)
wir	TIMB-001: Suspended Timber Floor	0.9	N/A	4.00	Tile (8mm)
wir	TIMB-001: Suspended Timber Floor	6.9	N/A	0.15	Tile (8mm)

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED1	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
BED2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
BED4	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
HALLWAY FF	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bath	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bed 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
ens	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
entry	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
garage	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	No
wir	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BED1	3	Downlight	150	Sealed
BED2	2	Downlight	150	Sealed
BED4	2	Downlight	150	Sealed
HALLWAY FF	4	Downlight	150	Sealed
KITCHEN/LIVING	9	Downlight	150	Sealed
KITCHEN/LIVING	1	Exhaust Fan	200	Sealed
bath	1	Downlight	150	Sealed
bath	1	Exhaust Fan	200	Sealed
bed 3	2	Downlight	150	Sealed
ens	1	Downlight	150	Sealed
ens	1	Exhaust Fan	200	Sealed
entry	3	Downlight	150	Sealed
linen	1	Downlight	150	Sealed

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
linen	1	Exhaust Fan	200	Sealed
pdr	1	Downlight	150	Sealed
pdr	1	Exhaust Fan	200	Sealed
wir	1	Downlight	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED1	1	1200
BED2	1	1200
BED4	1	1200
bed 3	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	0.50	Medium
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	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)
None				

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

* Refer to glossary.

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery *schedule*

Type	Storage Capacity [kWh]
No Whole of Home Data	

* Refer to glossary.

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 6, Lorikeet Grove, Warriewood NSW 2102**

Issue	File Ref	Description	Author	Date
A	#2401220	NatHERS Thermal Comfort and BASIX Assessment	CB/SS	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: **interlocked to light / timer off**

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-AH31LG-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 6, Lorikeet Grove, Warriewood, NSW, 2102
Lot/DP	Lot 6/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	NM105595
Prepared by	SEKISUI HOUSE SERVICES PTY LIMITED

Construction and environment

Assessed floor area (m²)*		**Exposure Type**	
Conditioned*	156.0	Suburban	
Unconditioned*	3.9	**NatHERS climate zone**	
Total	194.3	56 - Mascot AMO	
Garage	34.4		

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientlivingcom.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

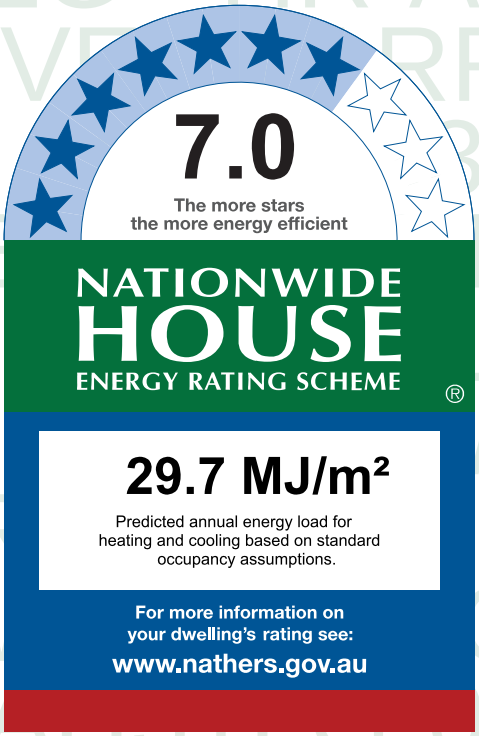
National Construction Code (NCC) requirements

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 J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

Thermal performance star rating



Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	21.2	8.4
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-AH31LG-01. When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

About the ratings

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

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 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 and 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: 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:

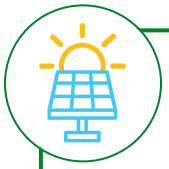
- Yes
- No
- NA - Not Applicable

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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
KITCHEN/LIVING/DINING/ENTRY/STAIRS	Kitchen/Living	61.75
LDRY	Unconditioned	3.89
PDR	Day Time	2.31
GARAGE	Garage	34.40
ENS	Night Time	7.46
WIR	Night Time	8.07
BATH	Day Time	7.37
BED 3	Bedroom	11.06
BED 4	Bedroom	10.86
WIL	Day Time	2.49
STAIRS/PASS	Day Time	14.44
BED 2	Bedroom	10.11
PRINCIPAL SUITE	Bedroom	17.26
BUTLER'S PANTY	Day Time	4.32
PASS	Day Time	4.84

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-012	Horizon Awning Window	3.17	0.45	0.43	0.47
WID-102-028	Horizon Sliding Window	3.12	0.47	0.45	0.49
WID-106-028	Horizon Fixed Window	2.08	0.54	0.52	0.57
WID-111-005	Ascend Stacking Door	2.93	0.48	0.46	0.50
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BED 2	WID-101-012	W08	1030	2650	Awning	10	SE	None
BED 3	WID-102-028	W12	1030	1810	Sliding	10	NE	None
BED 4	WID-106-028	W11	1030	850	Fixed	0	NE	None
BED 4	WID-101-012	W10	1030	2410	Awning	10	SE	None
ENS	WID-101-012	W06	455	1570	Awning	45	SW	None
KITCHEN/LIVING/DINING /ENTRY/STAIRS	WID-101-012	W04	2050	610	Awning	60	SE	None
KITCHEN/LIVING/DINING /ENTRY/STAIRS	WID-111-005	W03	2660	2400	Sliding Door	60	SW	None
KITCHEN/LIVING/DINING /ENTRY/STAIRS	WID-111-005	W02	2660	2400	Sliding Door	60	SE	None
KITCHEN/LIVING/DINING /ENTRY/STAIRS	WID-101-012	W01	2050	1210	Awning	60	SW	None
LDRY	WID-122-017	W05	2120	900	Casement	90	NE	None
PRINCIPAL SUITE	WID-111-005	W07	2510	2400	Sliding Door	60	SW	None
STAIRS/PASS	WID-106-028	W09	1030	1810	Fixed	0	SE	None

* Refer to glossary.

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
GARAGE	2285	4817	90	SE
KITCHEN/LIVING/DINING/ENTRY/STAIRS	2360	1275	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	Sekisui Nichiha Cladding Walls	1750	3696	NW		Yes
BED 2	Sekisui Nichiha Cladding Walls	2510	2880	SE		Yes
BED 2	Sekisui Nichiha Cladding Walls	2510	632	SE		No
BED 3	Sekisui Nichiha Cladding Walls	1750	675	NW		Yes
BED 3	Sekisui Nichiha Cladding Walls	2040	3065	NE	200	Yes
BED 3	Sekisui Nichiha Cladding Walls	2510	2935	NW		Yes
BED 4	Sekisui Nichiha Cladding Walls	2040	3010	NE	200	Yes
BED 4	Sekisui Nichiha Cladding Walls	1910	3610	SE		Yes
ENS	Sekisui Nichiha Cladding Walls	1750	3791	NW		Yes
ENS	Sekisui Nichiha Cladding Walls	2510	1674	SW	1192	Yes
ENS	Sekisui Nichiha Cladding Walls	2510	618	SE	4200	Yes
ENS	Sekisui Nichiha Cladding Walls	2510	293	SW		No
GARAGE	Sekisui Nichiha Cladding Walls	2660	3187	NW		Yes
GARAGE	Sekisui Nichiha Cladding Walls	2660	6183	NE	454	Yes
GARAGE	Sekisui Nichiha Cladding Walls	2660	5564	SE	854	Yes
GARAGE	Sekisui Nichiha Cladding Walls	2660	1802	SW	1621	Yes
GARAGE	Sekisui Nichiha Cladding Walls	2660	2377	NW	154	Yes
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	4963	SE		Yes
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	4216	SW	4810	Yes
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	3609	SE	4200	Yes
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	2137	SW	1201	Yes
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	1645	SW		Yes
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	1509	SE		No
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	1801	SE		Yes
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	1802	NE	7314	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
KITCHEN/LIVING /DINING/ENTRY/STAIRS	Sekisui Nichiha Cladding Walls	2660	312	SE		No
LDRY	Sekisui Nichiha Cladding Walls	2660	1702	NE	200	Yes
PRINCIPAL SUITE	Sekisui Nichiha Cladding Walls	2510	919	SE		No
PRINCIPAL SUITE	Sekisui Nichiha Cladding Walls	2510	4103	SW	1810	Yes
PRINCIPAL SUITE	Sekisui Nichiha Cladding Walls	2510	2862	SE		Yes
STAIRS/PASS	Sekisui Nichiha Cladding Walls	2510	2266	SE		Yes
WIL	Sekisui Nichiha Cladding Walls	1910	1301	SE		Yes
WIR	Sekisui Nichiha Cladding Walls	1750	4101	NW		Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	108.6	0.00
INT-PB	Internal Plasterboard Stud Wall	9.4	2.70
INT-PB-EXP1	Internal Plasterboard Stud Wall (exposed 1 side)	15.1	3.10
PARTIWALL	PARTIWALL	31.8	4.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	TIMB-001: Suspended Timber Floor	7.4	N/A	6.00	Tile (8mm)
BED 2	TIMB-001: Suspended Timber Floor	10.1	N/A	6.00	Carpet
BED 3	TIMB-001: Suspended Timber Floor	11.1	N/A	6.00	Carpet
BED 4	TIMB-001: Suspended Timber Floor	10.2	N/A	6.00	Carpet
BED 4	TIMB-002: Suspended Timber Floor - Lined Below	0.8	N/A	6.00	Carpet
BUTLER'S PANTY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	4.3	N/A	0.59	Tile (8mm)
ENS	TIMB-001: Suspended Timber Floor	7.5	N/A	6.00	Tile (8mm)
GARAGE	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	34.4	N/A	0.59	Exposed

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
KITCHEN/LIVING/DINING /ENTRY/STAIRS	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	61.8	N/A	0.59	Tile (8mm)
LDRY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	3.9	N/A	0.59	Tile (8mm)
PASS	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	4.8	N/A	0.59	Tile (8mm)
PDR	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.3	N/A	0.59	Tile (8mm)
PRINCIPAL SUITE	TIMB-001: Suspended Timber Floor	5.0	N/A	6.00	Carpet
PRINCIPAL SUITE	TIMB-002: Suspended Timber Floor - Lined Below	12.3	N/A	6.00	Carpet
STAIRS/PASS	TIMB-001: Suspended Timber Floor	14.4	N/A	6.00	Carpet
WIL	TIMB-001: Suspended Timber Floor	0.1	N/A	6.00	Tile (8mm)
WIL	TIMB-002: Suspended Timber Floor - Lined Below	2.3	N/A	6.00	Tile (8mm)
WIR	TIMB-001: Suspended Timber Floor	8.1	N/A	6.00	Carpet

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
BED 2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
BED 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
BED 4	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
BUTLER'S PANTY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
ENS	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
GARAGE	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
KITCHEN/LIVING/DINING /ENTRY/STAIRS	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
LDRY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
PRINCIPAL SUITE	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
STAIRS/PASS	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
WIL	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes

* Refer to glossary.

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
WIR	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BATH	1	Exhaust Fan	200	Sealed
BATH	1	Downlight	150	Sealed
BED 2	2	Downlight	150	Sealed
BED 3	2	Downlight	150	Sealed
BED 4	2	Downlight	150	Sealed
BUTLER'S PANTY	1	Downlight	150	Sealed
ENS	1	Exhaust Fan	200	Sealed
ENS	1	Downlight	150	Sealed
KITCHEN/LIVING/DINING/ENTRY/STAIRS	1	Exhaust Fan	200	Sealed
KITCHEN/LIVING/DINING/ENTRY/STAIRS	12	Downlight	150	Sealed
LDRY	1	Downlight	150	Sealed
PASS	1	Downlight	150	Sealed
PDR	1	Exhaust Fan	200	Sealed
PDR	1	Downlight	150	Sealed
PRINCIPAL SUITE	3	Downlight	150	Sealed
STAIRS/PASS	2	Downlight	150	Sealed
WIL	1	Downlight	150	Sealed
WIR	1	Downlight	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED 2	1	1300
BED 3	1	1300

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED 4	1	1300
PRINCIPAL SUITE	1	1300

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	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)
None				

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

* Refer to glossary.

Battery *schedule*

Type	Storage Capacity [kWh]
No Whole of Home Data	

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 7, Lorikeet Grove, Warriewood NSW 2102**

Issue	File Ref	Description	Author	Date
A	#2401187	NatHERS Thermal Comfort and BASIX Assessment	JF/SS	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: interlocked to light / timer off

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-CAEBUA-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 7, Lorikeet Grove, Warriewood, NSW, 2102
Lot/DP	7/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	NM105619
Prepared by	SEKISUI HOUSE SERVICES PTY LIMITED

Construction and environment

Assessed floor area (m²)*		**Exposure Type**	
Conditioned*	116.5	Suburban	
Unconditioned*	14.1	**NatHERS climate zone**	
Total	148.4	56 - Mascot AMO	
Garage	17.8		

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientlivingcom.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

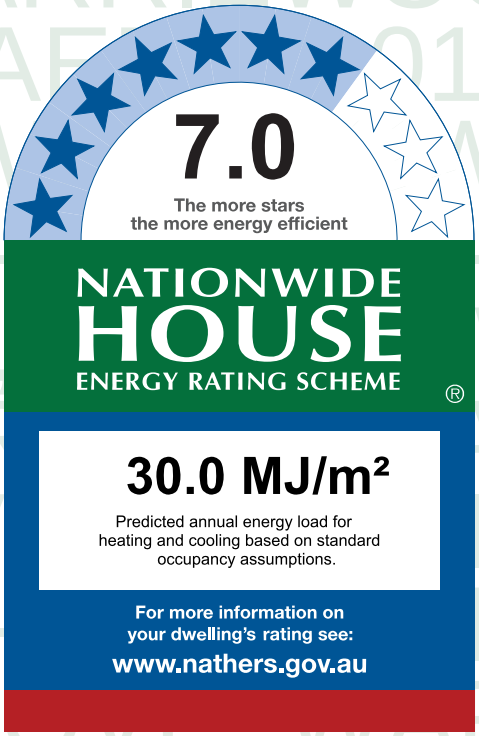
National Construction Code (NCC) requirements

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 J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

Thermal performance star rating



Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	18.3	11.7
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-CAEBUA-01. When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

About the ratings

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

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 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 and 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: 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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
garage	Garage	17.75
ldry	Unconditioned	3.85
pdr	Unconditioned	2.46
entry	Day Time	17.07
kitchen/Living	Kitchen/Living	39.84
bed 3	Bedroom	11.07
wir	Night Time	5.89
BED 1	Bedroom	17.87
ens	Night Time	7.03
bath	Unconditioned	7.80
bed 2	Bedroom	11.79
hallway	Day Time	11.98

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit

* Refer to glossary.

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-012	Horizon Awning Window	3.17	0.45	0.43	0.47
WID-106-028	Horizon Fixed Window	2.08	0.54	0.52	0.57
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54
WID-124-029	Paragon Stacking Door	3.26	0.45	0.43	0.47

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BED 1	WID-101-012	W13	1460	3010	Awning	10	NW	None
bath	WID-101-012	W11	860	1210	Awning	90	SW	None
bed 2	WID-106-028	W09	1200	850	Fixed	0	SW	None
bed 2	WID-101-012	W08	1200	2410	Awning	10	SE	None
bed 3	WID-101-012	W14	1200	850	Awning	10	SE	None
bed 3	WID-101-012	W15	1200	850	Awning	10	SE	None
ens	WID-101-012	W12	860	1570	Awning	45	NW	None
entry	WID-101-012	W01	1030	850	Awning	90	SE	None
hallway	WID-106-028	W10	860	2050	Fixed	0	SW	None
kitchen/Living	WID-101-012	W04	600	2050	Awning	41	SW	None
kitchen/Living	WID-101-012	W05	2050	1570	Awning	30	NW	None
kitchen/Living	WID-124-029	W06	2510	2170	Sliding Door	61	NE	None
kitchen/Living	WID-124-029	W07	2510	2676	Sliding Door	61	NW	None
ldry	WID-122-017	W03	2120	900	Casement	90	SW	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
pdr	WID-101-012	W02	860	850	Awning	90	SW	None

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
entry	2360	982	90	SE
garage	2265	2410	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-A	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	0.00	Yes

* Refer to glossary.

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-B	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	Sekisui Nichiha Cladding Walls-B	2185	4381	NW	228	Yes
bath	Sekisui Nichiha Cladding Walls-B	2510	2700	SW		Yes
bed 2	Sekisui Nichiha Cladding Walls-B	2510	2880	SW		Yes
bed 2	Sekisui Nichiha Cladding Walls-B	2510	4093	SE		Yes
bed 2	Sekisui Nichiha Cladding Walls-B	2510	600	NE		Yes
bed 3	Sekisui Nichiha Cladding Walls-B	2510	3180	SE		Yes
ens	Sekisui Nichiha Cladding Walls-B	2510	2440	SW		Yes
ens	Sekisui Nichiha Cladding Walls-B	2185	2880	NW	228	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	2264	SW		Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1800	SE	1781	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1200	NE	1623	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1080	SE	581	Yes
garage	Sekisui Nichiha Cladding Walls-A	2510	900	SW	1669	Yes
garage	Sekisui Nichiha Cladding Walls-A	2510	3181	SE	320	Yes
hallway	Sekisui Nichiha Cladding Walls-B	2510	2279	SW		Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	6481	SW	174	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	4080	NW	174	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	3001	NE	3293	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	3301	NW	3175	Yes
ldry	Sekisui Nichiha Cladding Walls-B	2510	1690	SW		Yes
pdr	Sekisui Nichiha Cladding Walls-B	2510	2281	SW		Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
pdr	Sekisui Nichiha Cladding Walls-B	2510	1079	SE	580	Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	81.5	0.00
INT-PB	Internal Plasterboard Stud Wall	18.0	2.70
INT-PB-EXP1	Internal Plasterboard Stud Wall (exposed 1 side)	2.3	3.10
PARTIWALL	PARTIWALL	48.8	4.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1	TIMB-001: Suspended Timber Floor	17.8	N/A	6.00	Carpet
bath	TIMB-001: Suspended Timber Floor	7.9	N/A	6.00	Tile (8mm)
bed 2	TIMB-001: Suspended Timber Floor	7.2	N/A	6.00	Carpet
bed 2	TIMB-002: Suspended Timber Floor - Lined Below	4.7	N/A	6.00	Carpet
bed 3	TIMB-001: Suspended Timber Floor	10.1	N/A	6.00	Carpet
bed 3	TIMB-002: Suspended Timber Floor - Lined Below	1.0	N/A	6.00	Carpet
ens	TIMB-001: Suspended Timber Floor	7.0	N/A	6.00	Tile (8mm)
entry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	17.1	N/A	0.59	Tile (8mm)
garage	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	17.8	N/A	0.59	Exposed
hallway	TIMB-001: Suspended Timber Floor	12.0	N/A	6.00	Carpet
kitchen/Living	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	39.8	N/A	0.59	Tile (8mm)
ldry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	3.9	N/A	0.59	Tile (8mm)
pdr	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.5	N/A	0.59	Tile (8mm)
wir	TIMB-001: Suspended Timber Floor	5.9	N/A	6.00	Carpet

* Refer to glossary.

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
bath	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
bed 2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
bed 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
ens	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
hallway	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
kitchen/Living	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
wir	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BED 1	3	Downlight	150	Sealed
bath	1	Downlight	150	Sealed
bath	1	Exhaust Fan	200	Sealed
bed 2	2	Downlight	150	Sealed
bed 3	2	Downlight	150	Sealed
ens	1	Downlight	150	Sealed
ens	1	Exhaust Fan	200	Sealed
entry	3	Downlight	150	Sealed
hallway	2	Downlight	150	Sealed
kitchen/Living	8	Downlight	150	Sealed
kitchen/Living	1	Exhaust Fan	200	Sealed
ldry	1	Downlight	150	Sealed
pdr	1	Downlight	150	Sealed
pdr	1	Exhaust Fan	200	Sealed
wir	1	Downlight	150	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED 1	1	1300
bed 2	1	1300
bed 3	1	1300

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	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)
None				

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]

* Refer to glossary.

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery *schedule*

Type	Storage Capacity [kWh]
No Whole of Home Data	

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 8, Road NO.1, Warriewood NSW 2102**

Issue	File Ref	Description	Author	Date
A	#2401192	NatHERS Thermal Comfort and BASIX Assessment	JF/SS	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: **interlocked to light / timer off**

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-XS60BK-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 8, Road NO.1, Warriewood, NSW, 2102
Lot/DP	8/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	NM105620
Prepared by	SEKISUI HOUSE SERVICES

Construction and environment

Assessed floor area (m²)*		**Exposure Type**
Conditioned*	133.9	Suburban
Unconditioned*	4.3	**NatHERS climate zone**
Total	158.2	56 - Mascot AMO
Garage	20.0	

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientlivingcom.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

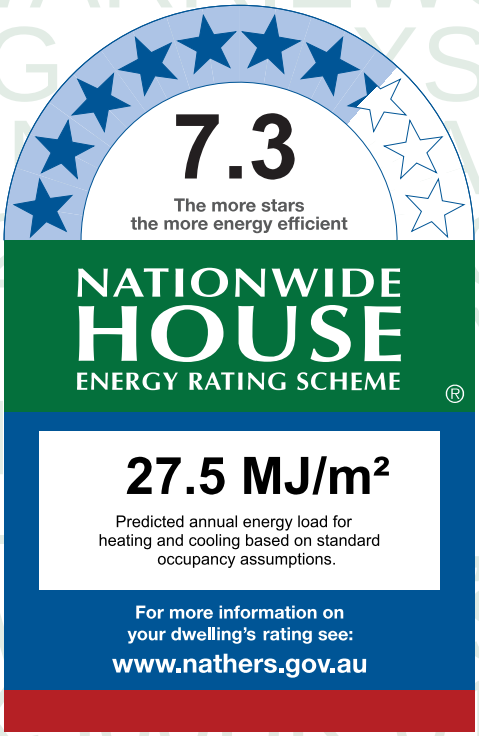
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

	Heating	Cooling
Modelled	14.3	13.2
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-XS60BK-01.

When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

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 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 and 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: 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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
pdr	Day Time	2.14
store	Unconditioned	1.49
ldry	Unconditioned	2.82
hallway	Day Time	2.82
K/L/D/Entry/Stairs	Kitchen/Living	49.77
bed 3	Bedroom	12.02
bath	Day Time	8.19
ens	Night Time	6.85
Bed1	Bedroom	16.63
wir	Night Time	7.94
Bed2	Bedroom	12.13
study	Day Time	17.49
garage	Garage	20.00

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit

None

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-032	Horizon Awning Window	3.97	0.58	0.55	0.61
WID-102-018	Horizon Sliding Window	3.96	0.61	0.58	0.64
WID-111-017	Ascend Stacking Door	3.79	0.62	0.59	0.66
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bed1	WID-101-032	W07	1460	2650	Awning	10	NW	None
Bed2	WID-101-032	W06	1200	2050	Awning	10	SE	None
K/L/D/Entry/Stairs	WID-101-032	W01	2050	2050	Awning	30	SE	None
K/L/D/Entry/Stairs	WID-111-017	W02	2510	3857	Sliding Door	45	NW	None
bed 3	WID-101-032	W04	1200	850	Awning	10	SE	None
bed 3	WID-101-032	W05	1200	850	Awning	10	SE	None
ens	WID-101-032	W08	860	2050	Awning	45	NW	None
ldry	WID-122-017	W03	2120	820	Casement	90	NW	None
study	WID-102-018	W09	1270	1200	Sliding	10	SE	None

* Refer to glossary.

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
K/L/D/Entry/Stairs	2360	982	90	SE
garage	2265	2410	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-A	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes
Sekisui Nichiha Cladding Walls-B	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	0.00	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bed1	Sekisui Nichiha Cladding Walls-A	2510	4081	NW	179	Yes
Bed2	Sekisui Nichiha Cladding Walls-A	2510	3481	SE		Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	1500	SE	1178	Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	3481	SE		Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	4681	NW	3012	Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	1201	NE	1332	Yes
bed 3	Sekisui Nichiha Cladding Walls-A	2510	595	SW		Yes
bed 3	Sekisui Nichiha Cladding Walls-A	2510	3180	SE		Yes
ens	Sekisui Nichiha Cladding Walls-A	2510	4081	NW	175	Yes
garage	Sekisui Nichiha Cladding Walls-B	2510	1201	SW	1334	Yes
garage	Sekisui Nichiha Cladding Walls-B	2510	3180	SE	654	Yes
hallway	Sekisui Nichiha Cladding Walls-A	2510	1680	NW	3012	Yes
ldry	Sekisui Nichiha Cladding Walls-A	2510	1680	NW		Yes
study	Sekisui Nichiha Cladding Walls-A	2510	1375	SE		Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	93.4	0.00
INT-PB	Internal Plasterboard Stud Wall	22.0	2.50
PARTIWALL	PARTIWALL	100.5	4.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed1	TIMB-001: Suspended Timber Floor	16.6	N/A	0.15	Carpet
Bed2	TIMB-001: Suspended Timber Floor	12.1	N/A	0.15	Carpet
K/L/D/Entry/Stairs	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	49.8	N/A	0.59	Tile (8mm)

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
bath	TIMB-001: Suspended Timber Floor	8.2	N/A	4.00	Tile (8mm)
bed 3	TIMB-001: Suspended Timber Floor	10.1	N/A	4.00	Carpet
bed 3	TIMB-002: Suspended Timber Floor - Lined Below	1.9	N/A	4.00	Carpet
ens	TIMB-001: Suspended Timber Floor	6.8	N/A	0.15	Tile (8mm)
garage	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	20.0	N/A	0.59	Exposed
hallway	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.8	N/A	0.59	Tile (8mm)
ldry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.8	N/A	0.59	Tile (8mm)
pdr	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.1	N/A	0.59	Tile (8mm)
store	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	1.5	N/A	0.59	Tile (8mm)
study	TIMB-001: Suspended Timber Floor	15.9	N/A	0.15	Carpet
study	TIMB-002: Suspended Timber Floor - Lined Below	1.7	N/A	4.00	Carpet
wir	TIMB-001: Suspended Timber Floor	7.9	N/A	0.15	Carpet

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bed1	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
Bed2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bath	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bed 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
ens	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
study	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
wir	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bed1	2	Downlight	150	Sealed

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bed2	2	Downlight	150	Sealed
K/L/D/Entry/Stairs	8	Downlight	150	Sealed
K/L/D/Entry/Stairs	1	Exhaust Fan	200	Sealed
bath	2	Downlight	150	Sealed
bath	1	Exhaust Fan	200	Sealed
bed 3	2	Downlight	150	Sealed
ens	1	Downlight	150	Sealed
ens	1	Exhaust Fan	200	Sealed
hallway	1	Downlight	150	Sealed
ldry	1	Downlight	150	Sealed
pdr	1	Downlight	150	Sealed
pdr	1	Exhaust Fan	200	Sealed
store	1	Downlight	150	Sealed
study	3	Downlight	150	Sealed
wir	2	Downlight	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Bed1	1	1200
Bed2	1	1200
bed 3	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	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)

* Refer to glossary.

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)
None				

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery *schedule*

Type	Storage Capacity [kWh]
No Whole of Home Data	

* Refer to glossary.

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 9, Road NO.1, Warriewood NSW 2102**

Issue	File Ref	Description	Author	Date
A	#2401193	NatHERS Thermal Comfort and BASIX Assessment	JF/SS	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: **interlocked to light / timer off**

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-YRBRW3-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 9, Road NO.1, Warriewood, NSW, 2102
Lot/DP	9/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	NM105621
Prepared by	SEKISUI HOUSE SERVICES

Construction and environment

Assessed floor area (m²)*		**Exposure Type**
Conditioned*	134.0	Suburban
Unconditioned*	4.3	**NatHERS climate zone**
Total	157.5	56 - Mascot AMO
Garage	19.1	

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientliving.com.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

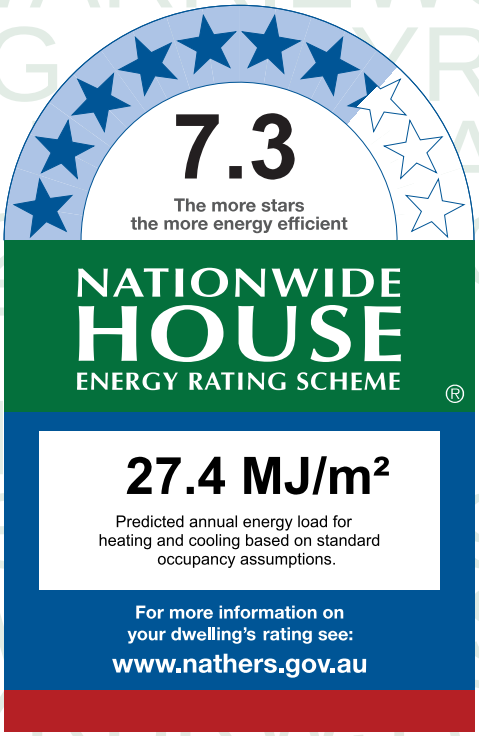
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

	Heating	Cooling
Modelled	14.2	13.2
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-YRBRW3-01.

When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

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 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 and 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: 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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
pdr	Day Time	2.14
store	Unconditioned	1.49
ldry	Unconditioned	2.82
hallway	Day Time	2.82
bed 3	Bedroom	12.02
bath	Day Time	8.19
ens	Night Time	6.85
Bed1	Bedroom	16.63
wir	Night Time	7.94
Bed2	Bedroom	12.13
study	Day Time	17.49
garage	Garage	19.12
K/L/D/Entry/Stairs	Kitchen/Living	49.77

* Refer to glossary.

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit

None

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-032	Horizon Awning Window	3.97	0.58	0.55	0.61
WID-102-018	Horizon Sliding Window	3.96	0.61	0.58	0.64
WID-111-017	Ascend Stacking Door	3.79	0.62	0.59	0.66
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bed1	WID-101-032	W07	1460	2650	Awning	10	NW	None
Bed2	WID-101-032	W06	1200	2050	Awning	10	SE	None
K/L/D/Entry/Stairs	WID-101-032	W01	2050	2050	Awning	30	SE	None
K/L/D/Entry/Stairs	WID-111-017	W02	2510	3857	Sliding Door	45	NW	None
bed 3	WID-101-032	W04	1200	850	Awning	10	SE	None
bed 3	WID-101-032	W05	1200	850	Awning	10	SE	None
ens	WID-101-032	W08	860	2050	Awning	45	NW	None
ldry	WID-122-017	W03	2120	820	Casement	90	NW	None
study	WID-102-018	W09	1270	1200	Sliding	10	SE	None

* Refer to glossary.

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
K/L/D/Entry/Stairs	2360	982	90	SE
garage	2265	2410	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-A	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes
Sekisui Nichiha Cladding Walls-B	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	0.00	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bed1	Sekisui Nichiha Cladding Walls-A	2510	4081	NW	179	Yes
Bed2	Sekisui Nichiha Cladding Walls-A	2510	3481	SE		Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	3481	SE		Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	4681	NW	3012	Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	1202	NE	1330	Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	1497	SE	1178	Yes
bed 3	Sekisui Nichiha Cladding Walls-A	2510	595	SW		Yes
bed 3	Sekisui Nichiha Cladding Walls-A	2510	3180	SE		Yes
ens	Sekisui Nichiha Cladding Walls-A	2510	4081	NW	175	Yes
garage	Sekisui Nichiha Cladding Walls-B	2510	923	SW	1334	Yes
garage	Sekisui Nichiha Cladding Walls-B	2510	3180	SE	932	Yes
hallway	Sekisui Nichiha Cladding Walls-A	2510	1680	NW	3012	Yes
ldry	Sekisui Nichiha Cladding Walls-A	2510	1680	NW		Yes
study	Sekisui Nichiha Cladding Walls-A	2510	1375	SE		Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	93.4	0.00
INT-PB	Internal Plasterboard Stud Wall	20.4	2.50
PARTIWALL	PARTIWALL	82.7	4.00
PARTIWALL	PARTIWALL	17.1	0.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed1	TIMB-001: Suspended Timber Floor	16.6	N/A	0.15	Carpet
Bed2	TIMB-001: Suspended Timber Floor	12.1	N/A	0.15	Carpet

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
K/L/D/Entry/Stairs	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	49.8	N/A	0.59	Tile (8mm)
bath	TIMB-001: Suspended Timber Floor	8.2	N/A	4.00	Tile (8mm)
bed 3	TIMB-001: Suspended Timber Floor	9.2	N/A	4.00	Carpet
bed 3	TIMB-002: Suspended Timber Floor - Lined Below	2.8	N/A	4.00	Carpet
ens	TIMB-001: Suspended Timber Floor	6.8	N/A	0.15	Tile (8mm)
garage	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	19.1	N/A	0.59	Exposed
hallway	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.8	N/A	0.59	Tile (8mm)
ldry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.8	N/A	0.59	Tile (8mm)
pdr	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.1	N/A	0.59	Tile (8mm)
store	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	1.5	N/A	0.59	Tile (8mm)
study	TIMB-001: Suspended Timber Floor	15.8	N/A	0.15	Carpet
study	TIMB-002: Suspended Timber Floor - Lined Below	1.7	N/A	4.00	Carpet
wir	TIMB-001: Suspended Timber Floor	7.9	N/A	0.15	Carpet

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bed1	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
Bed2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bath	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bed 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
ens	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
study	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
wir	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bed1	2	Downlight	150	Sealed
Bed2	2	Downlight	150	Sealed
K/L/D/Entry/Stairs	8	Downlight	150	Sealed
K/L/D/Entry/Stairs	1	Exhaust Fan	200	Sealed
bath	2	Downlight	150	Sealed
bath	1	Exhaust Fan	200	Sealed
bed 3	2	Downlight	150	Sealed
ens	1	Downlight	150	Sealed
ens	1	Exhaust Fan	200	Sealed
hallway	1	Downlight	150	Sealed
ldry	1	Downlight	150	Sealed
pdr	1	Downlight	150	Sealed
pdr	1	Exhaust Fan	200	Sealed
store	1	Downlight	150	Sealed
study	3	Downlight	150	Sealed
wir	2	Downlight	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Bed1	1	1200
Bed2	1	1200
bed 3	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	0.50	Medium

* Refer to glossary.

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)

None

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]

No Whole of Home Data

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity

No Whole of Home Data

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]

No Whole of Home Data

Battery *schedule*

Type	Storage Capacity [kWh]

No Whole of Home Data

* Refer to glossary.

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 10, Road NO.1, Warriewood NSW 2102**

Issue	File Ref	Description	Author	Date
A	#2401195	NatHERS Thermal Comfort and BASIX Assessment	JF/SS	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: **interlocked to light / timer off**

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-EGS9CD-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 10, Road NO.1, Warriewood, NSW, 2102
Lot/DP	10/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	NM105622
Prepared by	SEKISUI HOUSE SERVICES PTY LIMITED

Construction and environment

Assessed floor area (m²)*		**Exposure Type**	
Conditioned*	116.3	Suburban	
Unconditioned*	14.1	**NatHERS climate zone**	
Total	148.2	56 - Mascot AMO	
Garage	17.8		

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientlivingcom.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

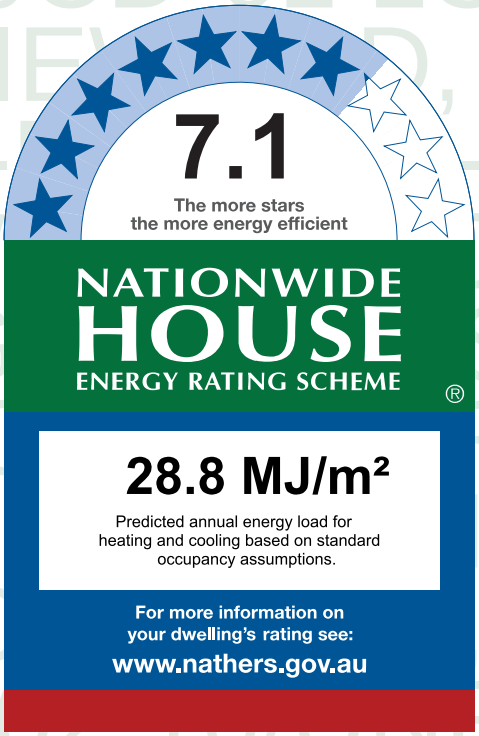
National Construction Code (NCC) requirements

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 J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

Thermal performance star rating



Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	15.9	12.9
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-EGS9CD-01. When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

About the ratings

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

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 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 and 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: 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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
garage	Garage	17.75
ldry	Unconditioned	3.85
pdr	Unconditioned	2.46
entry	Day Time	17.07
kitchen/Living	Kitchen/Living	39.84
bed 3	Bedroom	11.07
wir	Night Time	5.89
BED 1	Bedroom	17.87
ens	Night Time	7.03
bath	Unconditioned	7.80
bed 2	Bedroom	11.79
hallway	Day Time	11.98

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit

* Refer to glossary.

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-002	Horizon Awning Window	3.35	0.49	0.46	0.51
WID-106-020	Horizon Fixed Window	2.31	0.59	0.56	0.62
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54
WID-124-022	Paragon Stacking Door	3.44	0.49	0.46	0.51

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BED 1	WID-101-002	W13	1200	3010	Awning	10	NW	None
bath	WID-101-002	W11	860	1210	Awning	90	NE	None
bed 2	WID-106-020	W09	1200	850	Fixed	0	NE	None
bed 2	WID-101-002	W08	1200	2410	Awning	10	SE	None
bed 3	WID-101-002	W14	1200	850	Awning	10	SE	None
bed 3	WID-101-002	W15	1200	850	Awning	10	SE	None
ens	WID-101-002	W12	860	1570	Awning	45	NW	None
entry	WID-101-002	W01	860	850	Awning	90	SE	None
hallway	WID-106-020	W10	860	2050	Fixed	0	NE	None
kitchen/Living	WID-101-002	W04	600	2050	Awning	41	NE	None
kitchen/Living	WID-101-002	W05	2050	1570	Awning	30	NW	None
kitchen/Living	WID-124-022	W06	2510	2170	Sliding Door	61	SW	None
kitchen/Living	WID-124-022	W07	2510	2649	Sliding Door	61	NW	None
ldry	WID-122-017	W03	2120	900	Casement	90	NE	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
pdr	WID-101-002	W02	860	850	Awning	90	NE	None

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
entry	2360	982	90	SE
garage	2265	2410	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-A	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	0.00	Yes

* Refer to glossary.

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-B	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	Sekisui Nichiha Cladding Walls-B	2185	4381	NW	228	Yes
bath	Sekisui Nichiha Cladding Walls-B	2510	2700	NE		Yes
bed 2	Sekisui Nichiha Cladding Walls-B	2510	2880	NE		Yes
bed 2	Sekisui Nichiha Cladding Walls-B	2510	4093	SE		No
bed 2	Sekisui Nichiha Cladding Walls-B	2510	600	SW		Yes
bed 3	Sekisui Nichiha Cladding Walls-B	2510	3180	SE		Yes
ens	Sekisui Nichiha Cladding Walls-B	2510	2440	NE		Yes
ens	Sekisui Nichiha Cladding Walls-B	2185	2880	NW	228	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	2264	NE		Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1800	SE	1781	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1200	SW	1623	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1080	SE	581	Yes
garage	Sekisui Nichiha Cladding Walls-A	2510	900	NE	1668	Yes
garage	Sekisui Nichiha Cladding Walls-A	2510	3181	SE	320	Yes
hallway	Sekisui Nichiha Cladding Walls-B	2510	2279	NE		Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	6481	NE	174	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	4080	NW	174	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	3001	SW	3293	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	3301	NW	3175	Yes
ldry	Sekisui Nichiha Cladding Walls-B	2510	1690	NE		Yes
pdr	Sekisui Nichiha Cladding Walls-B	2510	2281	NE		Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
pdr	Sekisui Nichiha Cladding Walls-B	2510	1079	SE	580	Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	81.5	0.00
INT-PB	Internal Plasterboard Stud Wall	18.0	2.50
INT-PB-EXP1	Internal Plasterboard Stud Wall (exposed 1 side)	2.3	3.10
PARTIWALL	PARTIWALL	14.0	0.00
PARTIWALL	PARTIWALL	34.8	4.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1	TIMB-001: Suspended Timber Floor	17.8	N/A	0.15	Carpet
bath	TIMB-001: Suspended Timber Floor	7.9	N/A	0.15	Tile (8mm)
bed 2	TIMB-001: Suspended Timber Floor	7.2	N/A	0.15	Carpet
bed 2	TIMB-002: Suspended Timber Floor - Lined Below	4.7	N/A	4.00	Carpet
bed 3	TIMB-001: Suspended Timber Floor	10.1	N/A	4.00	Carpet
bed 3	TIMB-002: Suspended Timber Floor - Lined Below	1.0	N/A	4.00	Carpet
ens	TIMB-001: Suspended Timber Floor	7.0	N/A	0.15	Tile (8mm)
entry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	17.1	N/A	0.59	Tile (8mm)
garage	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	17.8	N/A	0.59	Exposed
hallway	TIMB-001: Suspended Timber Floor	1.1	N/A	4.00	Carpet
hallway	TIMB-001: Suspended Timber Floor	10.9	N/A	0.15	Carpet
kitchen/Living	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	39.8	N/A	0.59	Tile (8mm)
ldry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	3.9	N/A	0.59	Tile (8mm)
pdr	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.5	N/A	0.59	Tile (8mm)

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
wir	TIMB-001: Suspended Timber Floor	5.9	N/A	4.00	Carpet

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bath	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bed 2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bed 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
ens	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
hallway	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
kitchen/Living	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
wir	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BED 1	3	Downlight	150	Sealed
bath	1	Downlight	150	Sealed
bath	1	Exhaust Fan	200	Sealed
bed 2	2	Downlight	150	Sealed
bed 3	2	Downlight	150	Sealed
ens	1	Downlight	150	Sealed
ens	1	Exhaust Fan	200	Sealed
entry	3	Downlight	150	Sealed
hallway	2	Downlight	150	Sealed
kitchen/Living	8	Downlight	150	Sealed
kitchen/Living	1	Exhaust Fan	200	Sealed

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
ldry	1	Downlight	150	Sealed
pdr	1	Downlight	150	Sealed
pdr	1	Exhaust Fan	200	Sealed
wir	1	Downlight	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED 1	1	1200
bed 2	1	1200
bed 3	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	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)
None				

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]

* Refer to glossary.

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery *schedule*

Type	Storage Capacity [kWh]
No Whole of Home Data	

* Refer to glossary.

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 11, Road NO.1, Warriewood 2102**

Issue	File Ref	Description	Author	Date
A	#2401204	NatHERS Thermal Comfort and BASIX Assessment	JF/DR	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: **interlocked to light / timer off**

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-AB1J1O-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 11, Road NO.1, Warriewood, NSW, 2102
Lot/DP	7/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	NM105596
Prepared by	SEKISUI HOUSE SERVICES

Construction and environment

Assessed floor area (m²)*		**Exposure Type**
Conditioned*	116.5	Suburban
Unconditioned*	14.1	**NatHERS climate zone**
Total	148.4	56 - Mascot AMO
Garage	17.8	

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientliving.com.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

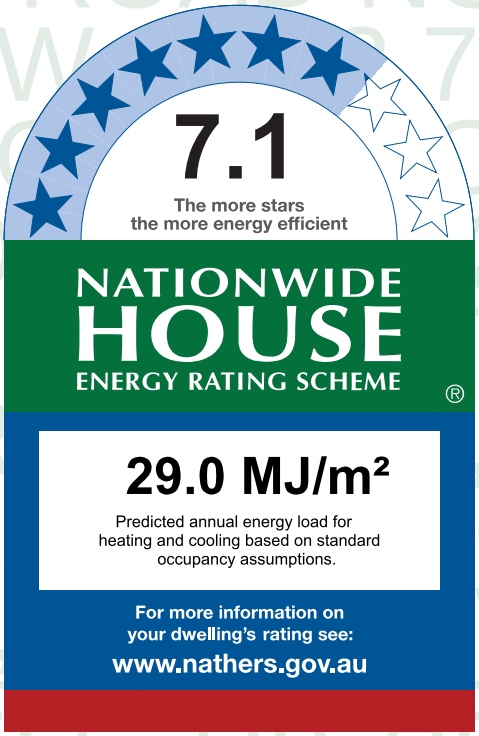
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

	Heating	Cooling
Modelled	18.3	10.7
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-AB1J1O-01. When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

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 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 and 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: 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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
garage	Garage	17.75
ldry	Unconditioned	3.85
pdr	Unconditioned	2.46
entry	Day Time	17.07
kitchen/Living	Kitchen/Living	39.84
bed 3	Bedroom	11.07
wir	Night Time	5.89
BED 1	Bedroom	17.87
ens	Night Time	7.03
bath	Unconditioned	7.80
bed 2	Bedroom	11.79
hallway	Day Time	11.98

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit

* Refer to glossary.

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-012	Horizon Awning Window	3.17	0.45	0.43	0.47
WID-106-028	Horizon Fixed Window	2.08	0.54	0.52	0.57
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54
WID-124-029	Paragon Stacking Door	3.26	0.45	0.43	0.47

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BED 1	WID-101-012	W13	1200	3010	Awning	10	NW	None
bath	WID-101-012	W11	860	1210	Awning	90	SW	None
bed 2	WID-106-028	W09	1200	850	Fixed	0	SW	None
bed 2	WID-101-012	W08	1200	2410	Awning	10	SE	None
bed 3	WID-101-012	W14	1200	850	Awning	10	SE	None
bed 3	WID-101-012	W15	1200	850	Awning	10	SE	None
ens	WID-101-012	W12	860	1570	Awning	45	NW	None
entry	WID-101-012	W01	815	850	Awning	90	SE	None
hallway	WID-106-028	W10	860	2050	Fixed	0	SW	None
kitchen/Living	WID-101-012	W04	600	2050	Awning	41	SW	None
kitchen/Living	WID-101-012	W05	2050	1570	Awning	30	NW	None
kitchen/Living	WID-124-029	W06	2510	2170	Sliding Door	61	NE	None
kitchen/Living	WID-124-029	W07	2510	2649	Sliding Door	61	NW	None
ldry	WID-122-017	W03	2120	900	Casement	90	SW	None

* Refer to glossary.

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
pdr	WID-101-012	W02	860	850	Awning	90	SW	None

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
entry	2360	982	90	SE
garage	2265	2410	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-A	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	0.00	Yes

* Refer to glossary.

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-B	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 1	Sekisui Nichiha Cladding Walls-B	2185	4381	NW	228	Yes
bath	Sekisui Nichiha Cladding Walls-B	2510	2700	SW		Yes
bed 2	Sekisui Nichiha Cladding Walls-B	2510	2880	SW		Yes
bed 2	Sekisui Nichiha Cladding Walls-B	2510	4093	SE		Yes
bed 2	Sekisui Nichiha Cladding Walls-B	2510	600	NE		Yes
bed 3	Sekisui Nichiha Cladding Walls-B	2510	3180	SE		Yes
ens	Sekisui Nichiha Cladding Walls-B	2510	2440	SW		Yes
ens	Sekisui Nichiha Cladding Walls-B	2185	2880	NW	228	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	2264	SW		Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1800	SE	1743	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1200	NE	1624	Yes
entry	Sekisui Nichiha Cladding Walls-B	2510	1080	SE	543	Yes
garage	Sekisui Nichiha Cladding Walls-A	2510	900	SW	1669	Yes
garage	Sekisui Nichiha Cladding Walls-A	2510	3181	SE	320	Yes
hallway	Sekisui Nichiha Cladding Walls-B	2510	2279	SW		Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	6481	SW	174	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	4080	NW	174	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	3001	NE	3293	Yes
kitchen/Living	Sekisui Nichiha Cladding Walls-B	2510	3301	NW	3175	Yes
ldry	Sekisui Nichiha Cladding Walls-B	2510	1690	SW		Yes
pdr	Sekisui Nichiha Cladding Walls-B	2510	2281	SW		Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
pdr	Sekisui Nichiha Cladding Walls-B	2510	1079	SE	542	Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	81.5	0.00
INT-PB	Internal Plasterboard Stud Wall	18.0	2.70
INT-PB-EXP1	Internal Plasterboard Stud Wall (exposed 1 side)	2.3	3.10
PARTIWALL	PARTIWALL	48.8	4.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 1	TIMB-001: Suspended Timber Floor	17.8	N/A	6.00	Carpet
bath	TIMB-001: Suspended Timber Floor	7.9	N/A	6.00	Tile (8mm)
bed 2	TIMB-001: Suspended Timber Floor	7.2	N/A	6.00	Carpet
bed 2	TIMB-002: Suspended Timber Floor - Lined Below	4.7	N/A	6.00	Carpet
bed 3	TIMB-001: Suspended Timber Floor	10.1	N/A	6.00	Carpet
bed 3	TIMB-002: Suspended Timber Floor - Lined Below	1.0	N/A	6.00	Carpet
ens	TIMB-001: Suspended Timber Floor	7.0	N/A	6.00	Tile (8mm)
entry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	17.1	N/A	0.59	Tile (8mm)
garage	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	17.8	N/A	0.59	Exposed
hallway	TIMB-001: Suspended Timber Floor	12.0	N/A	6.00	Carpet
kitchen/Living	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	39.8	N/A	0.59	Tile (8mm)
ldry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	3.9	N/A	0.59	Tile (8mm)
pdr	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.5	N/A	0.59	Tile (8mm)
wir	TIMB-001: Suspended Timber Floor	5.9	N/A	6.00	Carpet

* Refer to glossary.

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 1	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
bath	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
bed 2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
bed 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
ens	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
hallway	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
kitchen/Living	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes
wir	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	7.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BED 1	3	Downlight	150	Sealed
bath	1	Downlight	150	Sealed
bath	1	Exhaust Fan	200	Sealed
bed 2	2	Downlight	150	Sealed
bed 3	2	Downlight	150	Sealed
ens	1	Downlight	150	Sealed
ens	1	Exhaust Fan	200	Sealed
entry	3	Downlight	150	Sealed
hallway	2	Downlight	150	Sealed
kitchen/Living	8	Downlight	150	Sealed
kitchen/Living	1	Exhaust Fan	200	Sealed
ldry	1	Downlight	150	Sealed
pdr	1	Downlight	150	Sealed
pdr	1	Exhaust Fan	200	Sealed
wir	1	Downlight	150	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED 1	1	1300
bed 2	1	1300
bed 3	1	1300

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	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)
None				

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]

* Refer to glossary.

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery *schedule*

Type	Storage Capacity [kWh]
No Whole of Home Data	

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 12, Road NO.1, Warriewood NSW 2102**

Issue	File Ref	Description	Author	Date
A	#2401205	NatHERS Thermal Comfort and BASIX Assessment	JF/DR	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: **interlocked to light / timer off**

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-UBPJ62-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 12, Road NO.1, Warriewood, NSW, 2102
Lot/DP	12/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	NM105598
Prepared by	SEKISUI HOUSE SERVICES

Construction and environment

Assessed floor area (m²)*		**Exposure Type**	
Conditioned*	133.9	Suburban	
Unconditioned*	4.3	**NatHERS climate zone**	
Total	158.2	56 - Mascot AMO	
Garage	20.0		

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientliving.com.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

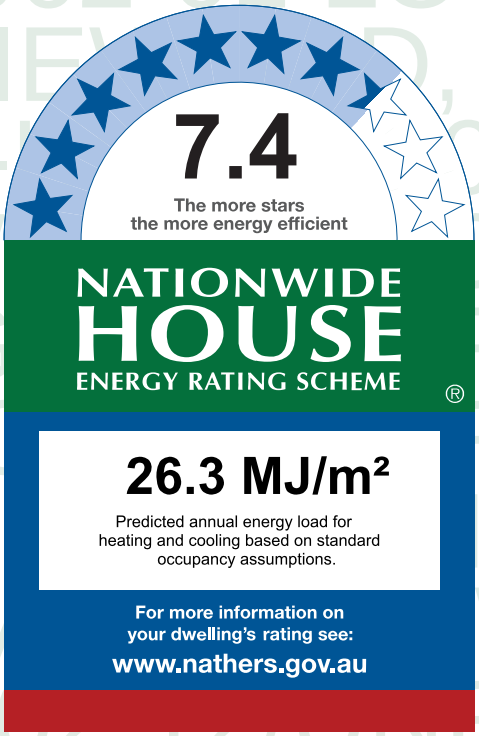
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

	Heating	Cooling
Modelled	14.0	12.4
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-UBPJ62-01. When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

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 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 and 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: 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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
pdr	Day Time	2.14
store	Unconditioned	1.49
ldry	Unconditioned	2.82
hallway	Day Time	2.82
K/L/D/Entry/Stairs	Kitchen/Living	49.77
bed 3	Bedroom	12.02
bath	Day Time	8.19
ens	Night Time	6.85
Bed1	Bedroom	16.63
wir	Night Time	7.94
Bed2	Bedroom	12.13
study	Day Time	17.49
garage	Garage	20.00

* Refer to glossary.

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit

None

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-032	Horizon Awning Window	3.97	0.58	0.55	0.61
WID-102-018	Horizon Sliding Window	3.96	0.61	0.58	0.64
WID-111-017	Ascend Stacking Door	3.79	0.62	0.59	0.66
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
Bed1	WID-101-032	W07	1200	2650	Awning	10	NW	None
Bed2	WID-101-032	W06	1200	2050	Awning	10	SE	None
K/L/D/Entry/Stairs	WID-101-032	W01	2050	2170	Awning	30	SE	None
K/L/D/Entry/Stairs	WID-111-017	W02	2510	3857	Sliding Door	60	NW	None
bed 3	WID-101-032	W04	1200	850	Awning	10	SE	None
bed 3	WID-101-032	W05	1200	850	Awning	10	SE	None
ens	WID-101-032	W08	860	2050	Awning	45	NW	None
ldry	WID-122-017	W03	2120	820	Casement	90	NW	None
study	WID-102-018	W09	1270	1200	Sliding	10	SE	None

* Refer to glossary.

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
K/L/D/Entry/Stairs	2360	982	90	SE
garage	2265	2410	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
Sekisui Nichiha Cladding Walls-A	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes
Sekisui Nichiha Cladding Walls-B	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	0.00	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
Bed1	Sekisui Nichiha Cladding Walls-A	2510	4081	NW	179	Yes
Bed2	Sekisui Nichiha Cladding Walls-A	2510	3481	SE		Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	1500	SE	1178	Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	3481	SE		Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	4681	NW	3012	Yes
K/L/D/Entry/Stairs	Sekisui Nichiha Cladding Walls-A	2510	1201	NE	1332	Yes
bed 3	Sekisui Nichiha Cladding Walls-A	2510	595	SW		Yes
bed 3	Sekisui Nichiha Cladding Walls-A	2510	3180	SE		Yes
ens	Sekisui Nichiha Cladding Walls-A	2510	4081	NW	175	Yes
garage	Sekisui Nichiha Cladding Walls-B	2510	1201	SW	1334	Yes
garage	Sekisui Nichiha Cladding Walls-B	2510	3180	SE	654	Yes
hallway	Sekisui Nichiha Cladding Walls-A	2510	1680	NW	3012	Yes
ldry	Sekisui Nichiha Cladding Walls-A	2510	1680	NW		Yes
study	Sekisui Nichiha Cladding Walls-A	2510	1375	SE		Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	93.4	0.00
INT-PB	Internal Plasterboard Stud Wall	20.3	2.50
PARTIWALL	PARTIWALL	100.5	4.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed1	TIMB-001: Suspended Timber Floor	16.6	N/A	0.15	Carpet
Bed2	TIMB-001: Suspended Timber Floor	12.1	N/A	0.15	Carpet
K/L/D/Entry/Stairs	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	49.8	N/A	0.59	Tile (8mm)

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
bath	TIMB-001: Suspended Timber Floor	8.2	N/A	4.00	Tile (8mm)
bed 3	TIMB-001: Suspended Timber Floor	10.1	N/A	4.00	Carpet
bed 3	TIMB-002: Suspended Timber Floor - Lined Below	1.9	N/A	4.00	Carpet
ens	TIMB-001: Suspended Timber Floor	6.8	N/A	0.15	Tile (8mm)
garage	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	20.0	N/A	0.59	Exposed
hallway	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.8	N/A	0.59	Tile (8mm)
ldry	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.8	N/A	0.59	Tile (8mm)
pdr	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.1	N/A	0.59	Tile (8mm)
store	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	1.5	N/A	0.59	Tile (8mm)
study	TIMB-001: Suspended Timber Floor	15.9	N/A	0.15	Carpet
study	TIMB-002: Suspended Timber Floor - Lined Below	1.7	N/A	4.00	Carpet
wir	TIMB-001: Suspended Timber Floor	7.9	N/A	0.15	Carpet

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
Bed1	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
Bed2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bath	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
bed 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
ens	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
study	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
wir	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bed1	2	Downlight	150	Sealed

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
Bed2	2	Downlight	150	Sealed
K/L/D/Entry/Stairs	8	Downlight	150	Sealed
K/L/D/Entry/Stairs	1	Exhaust Fan	200	Sealed
bath	2	Downlight	150	Sealed
bath	1	Exhaust Fan	200	Sealed
bed 3	2	Downlight	150	Sealed
ens	1	Downlight	150	Sealed
ens	1	Exhaust Fan	200	Sealed
hallway	1	Downlight	150	Sealed
ldry	1	Downlight	150	Sealed
pdr	1	Downlight	150	Sealed
pdr	1	Exhaust Fan	200	Sealed
store	1	Downlight	150	Sealed
study	3	Downlight	150	Sealed
wir	2	Downlight	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
Bed1	1	1200
Bed2	1	1200
bed 3	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	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)

* Refer to glossary.

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)
None				

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery *schedule*

Type	Storage Capacity [kWh]
No Whole of Home Data	

* Refer to glossary.

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.

efficient LIVING

NatHERS and BASIX Assessment

Sekisui House
Proposed Residential Development

To be built at **Lot 13, Road No.1, Warriewood NSW 2102**

Issue	File Ref	Description	Author	Date
A	#2401206	NatHERS Thermal Comfort and BASIX Assessment	CB/SS	13/12/2024

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Sekisui House. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.

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

Sustainable Building Consultants
p. 02 9970 6181 **e.** admin@efficientliving.com.au
www.efficientliving.com.au

BASIX Inclusions – extra notes:
There are a few inclusions set in the BASIX Portal which are not showing correctly in the BASIX Certificate. These items have been flagged with BASIX as errors. The correct inclusions should be as follows (shown in bold text):

Ventilation
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: **interlocked to light / timer off**

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. #HR-F6KR03-01

Generated on 13 Dec 2024 using Hero 4.1 (Chenath v3.23)

Property

Address	Lot 13, Road No.1, Warriewood, NSW, 2102
Lot/DP	Lot 13/unreg
NCC Class*	1a
Floor/all Floors	1 of 2 floors
Type	New

Plans

Main Plan	NM105599
Prepared by	SEKISUI HOUSE SERVICES PTY LIMITED

Construction and environment

Assessed floor area (m²)*		**Exposure Type**
Conditioned*	128.9	Suburban
Unconditioned*	2.8	**NatHERS climate zone**
Total	153.3	56 - Mascot AMO
Garage	21.6	

Accredited assessor

Name	Daniela Russo
Business name	Efficient Living
Email	daniela@efficientlivingcom.au
Phone	+61 299706181
Accreditation No.	10270
Assessor Accrediting Organisation	HERA
Declaration of interest	No Conflict of Interest

NCC Requirements

BCA provisions	Volume 2
State/Territory variation	Yes

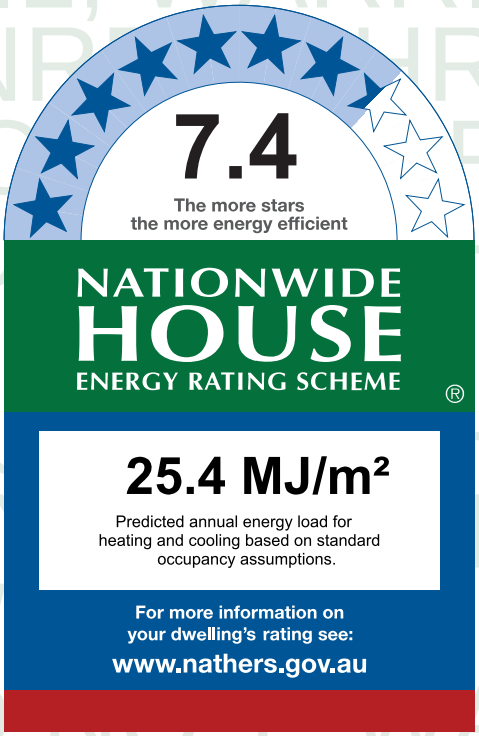
National Construction Code (NCC) requirements

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 J2D2(2)(a) and (3) of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

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

Thermal performance star rating



Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	11.7	13.8
Load limits	25	18

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

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 http://www.hero-software.com.au/pdf/HR-F6KR03-01.

When using either link, ensure you are visiting http://www.hero-software.com.au

* Refer to glossary.

About the ratings

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

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 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 and 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: 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

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar.

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.

* Refer to glossary.

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 who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
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 Certifi cate?	☐	☐	☐	☐	☐
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 on the NatHERS-stamped plans?	☐	☐	☐	☐	☐

* Refer to glossary.

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 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.

* Refer to glossary.

Additional Notes

Provisional Inclusions:

Roof default colour medium
Default colour modelled to external walls, windows frames and floor finishes
Waffle pod 225mm thick
Sealed and insulated Downlights 1 per 5m2 ceiling penetration diameter 150mm
Sealed and insulated Exhaust fans ceiling penetration diameter 200mm
Windows modelled as a proxy to match window manufacturer U-value and SHGC
Floor coverings: bare concrete to garage, carpet to bedrooms and first floor living areas, tiles to remainder of the house
Page 2 - Whole of home and Appliance check list on this NatHERS Certificate is not applicable in NSW as energy is covered by BASIX.
Insulation is applied to the conditioned envelope of the house; this includes; external walls of habitable rooms, the wall between the garage and the house and any vertical walls adjacent to roof space. Unless noted otherwise garage external walls do not require insulation.

- Windows areas may be split into varying sash types in the model
- Raked ceilings under 10 degrees are modelled as flat ceiling
- Sisalation / sarking is only shown in certificate where it provides a reflective air-space
- No insulation clearance modeled as IC rated downlights are nominated

Room *schedule*

Room	Zone Type	Area (m²)
KITCHEN/LIVING/DINING/ENTRY	Kitchen/Living	53.29
LDRY	Unconditioned	2.82
PDR	Day Time	2.47
PASS	Day Time	2.48
GARAGE	Garage	21.61
BED 2	Bedroom	10.30
BATH	Day Time	6.56
STAIRS/PASS	Day Time	15.51
PRINCILAP SUITE	Bedroom	15.44
WIR	Night Time	7.47
ENS	Night Time	7.01
WIR	Night Time	2.08
BED 3	Bedroom	9.18

* Refer to glossary.

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit

None

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	SHGC substitution tolerance ranges	
				lower limit	upper limit
WID-101-032	Horizon Awning Window	3.97	0.58	0.55	0.61
WID-102-018	Horizon Sliding Window	3.96	0.61	0.58	0.64
WID-111-017	Ascend Stacking Door	3.79	0.62	0.59	0.66
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BED 2	WID-101-032	W10	1200	2410	Awning	10	SE	None
BED 3	WID-101-032	W09	1200	2410	Awning	10	SE	None
ENS	WID-101-032	W08	860	610	Awning	90	NE	None
KITCHEN/LIVING/DINING /ENTRY	WID-101-032	W03	835	1810	Awning	45	NE	None
KITCHEN/LIVING/DINING /ENTRY	WID-101-032	W04	835	1810	Awning	45	NE	None
KITCHEN/LIVING/DINING /ENTRY	WID-111-017	W02	2510	3576	Sliding Door	58	NW	None
LDRY	WID-122-017	W01	2120	820	Casement	90	NW	None
PASS	WID-101-032	W05	1030	850	Awning	90	SE	None
PRINCILAP SUITE	WID-102-018	W06	1200	3010	Sliding	10	NW	None
WIR	WID-101-032	W07	1200	610	Awning	10	NW	None

* Refer to glossary.

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

Skylight ID	Skylight description
None	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
None								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
GARAGE	2265	2410	90	SE
KITCHEN/LIVING/DINING/ENTRY	2360	982	90	SE

External wall *type*

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
CONC-100-PB	Precast 100mm Concrete - Plasterboard Internally	0.50	Medium	0.00	No
Sekisui Nichiha Cladding Walls-A	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	3.10	Yes
Sekisui Nichiha Cladding Walls-B	Sekisui Nichiha Cladding Walls - Fibre-Cement Clad Battened (Refl Cavity) Stud Wall	0.50	Medium	0.00	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
BED 2	Sekisui Nichiha Cladding Walls-A	2510	3053	SE		No
BED 3	Sekisui Nichiha Cladding Walls-A	1930	2779	NE		Yes
BED 3	Sekisui Nichiha Cladding Walls-A	2510	3044	SE		No
BED 3	Sekisui Nichiha Cladding Walls-A	2510	238	NE		Yes
ENS	Sekisui Nichiha Cladding Walls-A	1930	3775	NE		Yes
GARAGE	Sekisui Nichiha Cladding Walls-B	2850	3188	SE	605	Yes
GARAGE	Sekisui Nichiha Cladding Walls-B	2850	1494	NE	2982	Yes
GARAGE	CONC-100-PB	340	5283	NE		No
GARAGE	CONC-100-PB	340	3188	NW		No
KITCHEN/LIVING /DINING/ENTRY	Sekisui Nichiha Cladding Walls-A	2510	922	NE	4684	Yes
KITCHEN/LIVING /DINING/ENTRY	Sekisui Nichiha Cladding Walls-A	2510	761	NW	2893	Yes
KITCHEN/LIVING /DINING/ENTRY	Sekisui Nichiha Cladding Walls-A	2510	3890	NE		Yes
KITCHEN/LIVING /DINING/ENTRY	Sekisui Nichiha Cladding Walls-A	2510	1200	NW		Yes
KITCHEN/LIVING /DINING/ENTRY	Sekisui Nichiha Cladding Walls-A	2510	5574	NE		Yes
KITCHEN/LIVING /DINING/ENTRY	Sekisui Nichiha Cladding Walls-A	2510	1665	SE	2053	Yes
KITCHEN/LIVING /DINING/ENTRY	Sekisui Nichiha Cladding Walls-A	2510	3740	NW	2893	Yes
LDRY	Sekisui Nichiha Cladding Walls-A	2510	1674	SW		No
LDRY	Sekisui Nichiha Cladding Walls-A	2510	1683	NW	184	Yes
LDRY	Sekisui Nichiha Cladding Walls-A	2510	1674	NE	4684	Yes
PASS	Sekisui Nichiha Cladding Walls-A	2510	1494	SW	4919	Yes
PASS	Sekisui Nichiha Cladding Walls-A	2510	1088	SE	559	Yes
PDR	Sekisui Nichiha Cladding Walls-A	2510	2283	NE		Yes
PDR	Sekisui Nichiha Cladding Walls-A	2510	1083	SE		Yes
PRINCILAP SUITE	Sekisui Nichiha Cladding Walls-A	1930	4085	NW	185	Yes
WIR	Sekisui Nichiha Cladding Walls-A	1930	1978	NW	185	Yes

* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
WIR	Sekisui Nichiha Cladding Walls-A	2510	3779	NE		Yes
WIR	Sekisui Nichiha Cladding Walls-A	1930	1619	NE		Yes

Internal wall *type*

Wall ID	Wall Type	Area (m^2)	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	81.9	0.00
INT-PB	Internal Plasterboard Stud Wall	19.5	2.50
INT-PB-EXP1	Internal Plasterboard Stud Wall (exposed 1 side)	8.2	3.10
PARTIWALL	PARTIWALL	45.3	4.00
PARTIWALL	PARTIWALL	19.3	0.00

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	TIMB-001: Suspended Timber Floor	6.6	N/A	4.00	Tile (8mm)
BED 2	TIMB-001: Suspended Timber Floor	8.4	N/A	4.00	Carpet
BED 2	TIMB-002: Suspended Timber Floor - Lined Below	1.9	N/A	4.00	Carpet
BED 3	TIMB-001: Suspended Timber Floor	4.3	N/A	0.15	Carpet
BED 3	TIMB-001: Suspended Timber Floor	0.1	N/A	4.00	Carpet
BED 3	TIMB-002: Suspended Timber Floor - Lined Below	4.7	N/A	4.00	Carpet
ENS	TIMB-001: Suspended Timber Floor	7.0	N/A	0.15	Tile (8mm)
GARAGE	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	21.6	N/A	0.59	Exposed
KITCHEN/LIVING/DINING /ENTRY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	53.3	N/A	0.59	Tile (8mm)
LDRY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.8	N/A	0.59	Tile (8mm)
PASS	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.5	N/A	0.59	Tile (8mm)
PDR	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	2.5	N/A	0.59	Tile (8mm)
PRINCILAP SUITE	TIMB-001: Suspended Timber Floor	15.4	N/A	0.15	Carpet

* Refer to glossary.

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
STAIRS/PASS	TIMB-001: Suspended Timber Floor	10.3	N/A	0.15	Carpet
STAIRS/PASS	TIMB-001: Suspended Timber Floor	5.1	N/A	4.00	Carpet
WIR	TIMB-001: Suspended Timber Floor	9.6	N/A	0.15	Carpet

Ceiling *type*

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
BED 2	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
BED 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
ENS	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
KITCHEN/LIVING/DINING /ENTRY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
LDRY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
PDR	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
PRINCILAP SUITE	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
STAIRS/PASS	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
WIR	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BATH	1	Downlight	150	Sealed
BATH	1	Exhaust Fan	200	Sealed
BED 2	2	Downlight	150	Sealed
BED 3	2	Downlight	150	Sealed
ENS	1	Downlight	150	Sealed
ENS	1	Exhaust Fan	200	Sealed
KITCHEN/LIVING/DINING/ENTRY	10	Downlight	150	Sealed

* Refer to glossary.

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
KITCHEN/LIVING/DINING/ENTRY	1	Exhaust Fan	200	Sealed
LDRY	1	Downlight	150	Sealed
PASS	1	Downlight	150	Sealed
PDR	1	Downlight	150	Sealed
PDR	1	Exhaust Fan	200	Sealed
PRINCILAP SUITE	3	Downlight	150	Sealed
STAIRS/PASS	3	Downlight	150	Sealed
WIR	2	Downlight	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
BED 2	1	1200
BED 3	1	1200
PRINCILAP SUITE	1	1200

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	1.80	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)
None				

Appliance *schedule*

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

Cooling system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

* Refer to glossary.

Heating system

Type	Location	Fuel Type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data				

Hot water system

Type	Fuel type	Hot Water CER Zone	Minimum efficiency / STC	Assessed daily load [litres]
No Whole of Home Data				

Pool / spa equipment

Type	Fuel type	Minimum efficiency / performance	Recommended capacity
No Whole of Home Data			

Onsite Renewable Energy *schedule*

Type	Orientatation	Generation Capacity [kW]
No Whole of Home Data		

Battery *schedule*

Type	Storage Capacity [kWh]
No Whole of Home Data	

* Refer to glossary.

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 homes 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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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.
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.
COP	Coefficient of performance
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 homes 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 - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
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.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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 Regulatory
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, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

* Refer to glossary.