

### Sekisui House Proposed Residential Development

To be built at Lot 13, Road NO.1, Frenchs Forest NSW 2086

Issue	File Ref	Description	Author	Date
A	2401170	NatHERS Thermal Comfort and BASIX Assessment	JF/SS	28/04/2025

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.





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28 April 2025

Lot 13, Road NO.1, Frenchs Forest  
**Sekisui House Services NSW Pty**

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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-GQCB78-01

Generated on 28 Apr 2025 using Hero 4.1 (Chenath v3.23)

### Property

**Address** Lot 13, Road No.1, Frenchs Forest, NSW, 2086

**Lot/DP** 13/unreg

**NCC Class\*** 1a

**Floor/all Floors** 1 of 2 floors

**Type** New

### Plans

**Main Plan** NM105572 REV10 05.03.2025

**Prepared by** SEKISUI HOUSES SERVICES (NSW) PTY LIMITED

### Construction and environment

<b>Assessed floor area (m²)*</b>	<b>Exposure Type</b>
<b>Conditioned*</b> 193.3	Suburban
<b>Unconditioned*</b> 18.1	<b>NatHERS climate zone</b>
<b>Total</b> 250.3	56 - Mascot AMO
<b>Garage</b> 39.0	



### Accredited assessor

**Name** Haylea Edwards

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**Phone** +61 9970 6181

**Accreditation No.** 10213

**Assessor Accrediting Organisation** HERA

**Declaration of interest** No Conflict of Interest

### NCC Requirements

**BCA provisions** Volume 2

**State/Territory variation** Yes

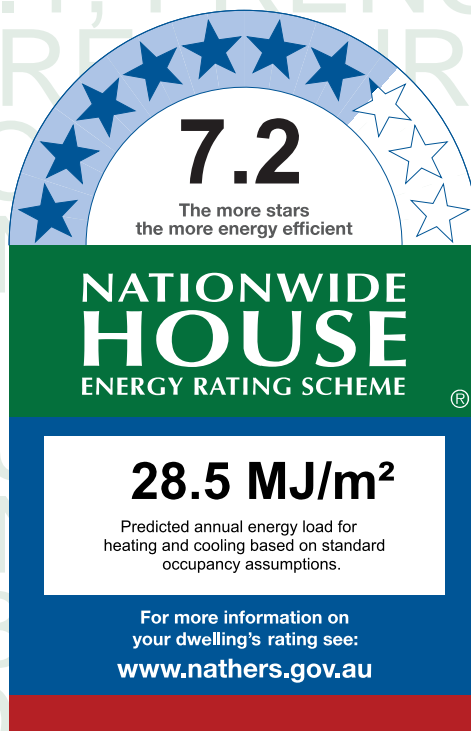
#### National Construction Code (NCC) requirements

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](http://www.abcb.gov.au).

### Thermal performance star rating



### Thermal performance (MJ/m²)

Limits taken from ABCB Standard 2022

	Heating	Cooling
<b>Modelled</b>	13.4	15.1
<b>Load limits</b>	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	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-GQCB78-01>.

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



\* Refer to glossary.

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.

## 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?

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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?

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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?

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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?

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#### 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?

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#### Ceiling

Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certificate?

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#### 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?

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#### 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.

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#### 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".

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#### Heating and cooling load limits\*

Do the load limits settings (shown on page 1) match what is shown on the NatHERS-stamped plans?

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\* 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?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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#### Insulation installation method

Has the insulation been installed according to the NCC requirements?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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#### Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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### 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the heating 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Does the lighting meet the artificial lighting requirements specified in the NCC?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the hot water system meet the additional requirements specified in the NCC?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### Provisional values\* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?	<input type="checkbox"/>	<input type="checkbox"/>			
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#### Other NCC requirements

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

## Additional Notes

### 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 5m<sup>2</sup> 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 (m <sup>2</sup> )
GARAGE	Garage	38.95
LAUNDRY	Unconditioned	5.56
LOUNGE	Living	9.18
GST BATH	Unconditioned	5.81
GUEST ROOM	Bedroom	13.16
KITCHEN/LIVING	Kitchen/Living	56.37
ENTRY	Day Time	9.63
PANTRY	Day Time	4.84
BED 3	Bedroom	9.50
WIR 3	Night Time	2.58
BED 4	Bedroom	11.39
BATH	Unconditioned	6.70
WC	Day Time	2.40
BED 2	Bedroom	11.66
ENSUITE	Night Time	9.83
BED 1	Bedroom	16.80



Room schedule

Room	Zone Type	Area (m²)
WIR	Night Time	3.15
WIR	Night Time	3.15
FAMILY	Living	31.33

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-106-017	Horizon Fixed Window	3.10	0.71	0.68	0.75
WID-122-017	Paragon Entry Door	3.92	0.51	0.49	0.54
WID-124-018	Paragon Stacking Door	4.05	0.58	0.55	0.61

Window and glazed door schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BATH	WID-101-032	W207	395	1570	Awning	37	N	None
BED 1	WID-101-032	W204	1030	2650	Awning	10	E	None
BED 2	WID-101-032	W206	600	2410	Awning	10	N	None
BED 3	WID-106-017	W208	860	850	Fixed	0	N	None
BED 3	WID-101-032	W209	860	2350	Awning	10	W	None
BED 4	WID-101-032	W201	1460	1274	Awning	10	W	None
ENSUITE	WID-101-032	W205	1030	1570	Awning	43	N	None
FAMILY	WID-106-017	W203	1030	1810	Fixed	0	S	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*
FAMILY	WID-102-018	W202	600	2650	Sliding	40	S	None
GST BATH	WID-101-032	W107	1030	610	Awning	34	N	None
GUEST ROOM	WID-102-018	W106	1030	1810	Sliding	45	N	None
KITCHEN/LIVING	WID-101-032	W105	2400	2400	Awning	34	E	None
KITCHEN/LIVING	WID-106-017	W102	600	2410	Fixed	0	S	None
KITCHEN/LIVING	WID-124-018	D103	2920	3500	Sliding Door	62	E	None
LAUNDRY	WID-122-017	D102	2120	900	Casement	90	S	None
LOUNGE	WID-101-032	W101	2050	1210	Awning	60	W	None
PANTRY	WID-101-032	W103	2400	610	Awning	61	E	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 (m²)	Orient-ation	Outdoor shade	Diffuser	Shaft Reflectance
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### Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orientation	Outdoor shade	Diffuser	Shaft Reflectance
None								

### External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
ENTRY	2360	1275	90	W
GARAGE	2265	4817	90	W

### 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	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

### External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH	Sekisui Nichiha Cladding Walls-B	1960	1695	N	760	Yes
BED 1	Sekisui Nichiha Cladding Walls-B	1780	3588	E	760	No
BED 2	Sekisui Nichiha Cladding Walls-B	1960	3780	N	760	Yes
BED 3	Sekisui Nichiha Cladding Walls-B	1960	3075	N	760	Yes
BED 3	Sekisui Nichiha Cladding Walls-B	2000	3090	W	1310	Yes
BED 4	Sekisui Nichiha Cladding Walls-B	2140	2532	S	760	Yes
BED 4	Sekisui Nichiha Cladding Walls-B	2000	1810	W	1310	Yes
BED 4	Sekisui Nichiha Cladding Walls-B	2510	90	S		Yes
BED 4	Sekisui Nichiha Cladding Walls-B	2000	500	S	2570	Yes
BED 4	Sekisui Nichiha Cladding Walls-B	2000	1660	W	720	Yes
BED 4	Sekisui Nichiha Cladding Walls-B	2000	468	S	760	Yes
ENSUITE	Sekisui Nichiha Cladding Walls-B	1960	3181	N	762	Yes

\* Refer to glossary.



## External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
ENSUITE	Sekisui Nichiha Cladding Walls-B	2510	2070	E	760	No
ENSUITE	Sekisui Nichiha Cladding Walls-B	1780	1018	E	760	No
ENTRY	Sekisui Nichiha Cladding Walls-B	2510	1694	W	2375	Yes
FAMILY	Sekisui Nichiha Cladding Walls-B	2140	2396	S	1360	Yes
FAMILY	Sekisui Nichiha Cladding Walls-B	2140	600	E	2176	Yes
FAMILY	Sekisui Nichiha Cladding Walls-B	2140	3387	S	760	Yes
GARAGE	Sekisui Nichiha Cladding Walls-A	2510	5880	S	305	Yes
GARAGE	Sekisui Nichiha Cladding Walls-A	2510	5881	W	2421	Yes
GST BATH	Sekisui Nichiha Cladding Walls-B	2510	2280	N	240	Yes
GUEST ROOM	Sekisui Nichiha Cladding Walls-B	2510	3781	N	240	Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	3190	3088	E	200	Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	3190	4684	S	258	Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	3190	4695	N	240	Yes
KITCHEN/LIVING	Sekisui Nichiha Cladding Walls-B	3190	5913	E	3186	Yes
KITCHEN/LIVING	CONC-100-PB	680	3600	W		No
KITCHEN/LIVING	CONC-100-PB	680	3040	W		No
KITCHEN/LIVING	CONC-100-PB	680	1280	S		No
KITCHEN/LIVING	CONC-100-PB	680	1061	W		No
KITCHEN/LIVING	CONC-100-PB	680	2508	N		No
LAUNDRY	Sekisui Nichiha Cladding Walls-B	3190	2281	S	259	Yes
LAUNDRY	CONC-100-PB	680	2070	W		No
LAUNDRY	CONC-100-PB	680	1201	N		No
LAUNDRY	CONC-100-PB	680	893	W		No
LOUNGE	Sekisui Nichiha Cladding Walls-B	2510	3187	N	240	Yes
LOUNGE	Sekisui Nichiha Cladding Walls-B	2510	1200	S	7772	Yes

\* Refer to glossary.

## External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
LOUNGE	Sekisui Nichiha Cladding Walls-B	2510	1980	W	1175	Yes
LOUNGE	Sekisui Nichiha Cladding Walls-B	2510	900	W		Yes
PANTRY	Sekisui Nichiha Cladding Walls-B	3190	2881	N	5626	Yes
PANTRY	Sekisui Nichiha Cladding Walls-B	3190	1680	E	199	Yes
PANTRY	Sekisui Nichiha Cladding Walls-B	3190	2881	S	259	Yes
WC	Sekisui Nichiha Cladding Walls-B	1960	1543	N	762	Yes
WIR	Sekisui Nichiha Cladding Walls-B	2140	2280	S	760	Yes
WIR	Sekisui Nichiha Cladding Walls-B	2140	600	W	2168	Yes
WIR	Sekisui Nichiha Cladding Walls-B	1780	1380	E	760	No
WIR	Sekisui Nichiha Cladding Walls-B	2140	2281	S	760	Yes
WIR 3	Sekisui Nichiha Cladding Walls-B	2000	600	N	4360	Yes
WIR 3	Sekisui Nichiha Cladding Walls-B	2000	420	W	1310	Yes
WIR 3	Sekisui Nichiha Cladding Walls-B	2000	1071	W	710	Yes

## Internal wall *type*

Wall ID	Wall Type	Area (m <sup>2</sup> )	Bulk insulation
INT-PB	Internal Plasterboard Stud Wall	35.1	2.50
INT-PB	Internal Plasterboard Stud Wall	149.8	0.00
INT-PB-EXP1	Internal Plasterboard Stud Wall (exposed 1 side)	21.4	3.10

## Floor *type*

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH	TIMB-001: Suspended Timber Floor	6.6	N/A	0.15	Tile (8mm)
BED 1	TIMB-001: Suspended Timber Floor	16.8	N/A	0.15	Carpet
BED 2	TIMB-001: Suspended Timber Floor	11.6	N/A	0.15	Carpet
BED 3	TIMB-001: Suspended Timber Floor	8.7	N/A	0.15	Carpet

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 3	TIMB-002: Suspended Timber Floor - Lined Below	0.8	N/A	4.00	Carpet
BED 4	TIMB-001: Suspended Timber Floor	8.4	N/A	4.00	Carpet
BED 4	TIMB-002: Suspended Timber Floor - Lined Below	3.0	N/A	4.00	Carpet
ENSUITE	TIMB-001: Suspended Timber Floor	9.8	N/A	0.15	Tile (8mm)
ENTRY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	9.6	N/A	0.59	Tile (8mm)
FAMILY	TIMB-001: Suspended Timber Floor	9.4	N/A	0.15	Carpet
FAMILY	TIMB-001: Suspended Timber Floor	22.0	N/A	4.00	Carpet
GARAGE	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	39.0	N/A	0.59	Exposed
GST BATH	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	5.8	N/A	0.59	Tile (8mm)
GUEST ROOM	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	13.2	N/A	0.59	Carpet
KITCHEN/LIVING	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	56.4	N/A	0.59	Tile (8mm)
LAUNDRY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	5.6	N/A	0.59	Tile (8mm)
LOUNGE	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	9.2	N/A	0.59	Tile (8mm)
PANTRY	WAFFLE-85: Concrete Waffle Pod Slab on Ground (85mm)	4.8	N/A	0.59	Tile (8mm)
WC	TIMB-001: Suspended Timber Floor	2.4	N/A	0.15	Tile (8mm)
WIR	TIMB-001: Suspended Timber Floor	6.2	N/A	0.15	Carpet
WIR 3	TIMB-001: Suspended Timber Floor	0.8	N/A	4.00	Carpet
WIR 3	TIMB-002: Suspended Timber Floor - Lined Below	1.6	N/A	4.00	Carpet
WIR 3	TIMB-001: Suspended Timber Floor	0.2	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 1	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

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BED 3	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
BED 4	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
ENSUITE	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
FAMILY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
GARAGE	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	0.00	Yes
GST BATH	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
GUEST ROOM	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
LAUNDRY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
LOUNGE	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
PANTRY	ATTIC-METAL-01: Pitched / Attic Metal Roof (Roofspace) & Flat PB Ceiling	6.00	Yes
WC	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
WIR 3	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 1	3	Downlight	150	Sealed
BED 2	2	Downlight	150	Sealed
BED 3	2	Downlight	150	Sealed
BED 4	2	Downlight	150	Sealed
ENSUITE	2	Downlight	150	Sealed
ENSUITE	1	Exhaust Fan	200	Sealed

\* Refer to glossary.



Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
ENTRY	2	Downlight	150	Sealed
FAMILY	6	Downlight	150	Sealed
GST BATH	1	Downlight	150	Sealed
GST BATH	1	Exhaust Fan	200	Sealed
GUEST ROOM	1	Downlight	150	Sealed
KITCHEN/LIVING	7	Downlight	150	Sealed
KITCHEN/LIVING	1	Exhaust Fan	200	Sealed
LAUNDRY	1	Downlight	150	Sealed
LOUNGE	2	Downlight	150	Sealed
PANTRY	1	Downlight	150	Sealed
WC	1	Downlight	150	Sealed
WC	1	Exhaust Fan	200	Sealed
WIR	2	Downlight	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
BED 1	1	1200
BED 2	1	1200
BED 3	1	1200
BED 4	1	1200
GUEST ROOM	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)
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## 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	

## Explanatory Notes

### About this report

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

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

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

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

### Accredited assessors

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

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

are not quality assured.

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

### Disclaimer

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

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

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

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

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>AFRC</b>	Australian Fenestration Rating Council
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, 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.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>COP</b>	Coefficient of performance
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>EER</b>	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
<b>Energy use</b>	This is your home's rating without solar or batteries.
<b>Energy value</b>	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).
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure</b>	see exposure categories below
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Net zero home</b>	a home that achieves a net zero energy value*.
<b>Opening percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Recommended capacity</b>	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.
<b>Reflective wrap (also known as foil)</b>	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight (also known as roof lights)</b>	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>STCs</b>	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
<b>Thermal breaks</b>	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.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).
<b>Window shading device</b>	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.