

# Nationwide House Energy Rating Scheme®

## NatHERS® Certificate No. #HR-QQ9EA6-01

Generated on 02 Sep 2024 using Hero 4.1 (Chenath v3.23)

### Property

Address	65 Dalton Avenue, Condell Park, NSW, 2200
Lot/DP	227/224013
NCC Class*	1a
Floor/all Floors	1 of 3 floors
Type	New

### Plans

Main Plan	1-21.08.2024
Prepared by	AYA CONSTRUCTIONS

### Construction and environment

Assessed floor area (m²)*	Exposure Type
Conditioned* 301.4	Suburban
Unconditioned* 38.0	NatHERS climate zone
Total 415.3	56 - Mascot AMO
Garage 75.8	



### Accredited assessor

Name	Ioannis Fragkoulidis
Business name	AENEC-Trading as Wide Spectrum Pty Ltd
Email	yanni.aenec@gmail.com
Phone	+61 452648288
Accreditation No.	10002
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

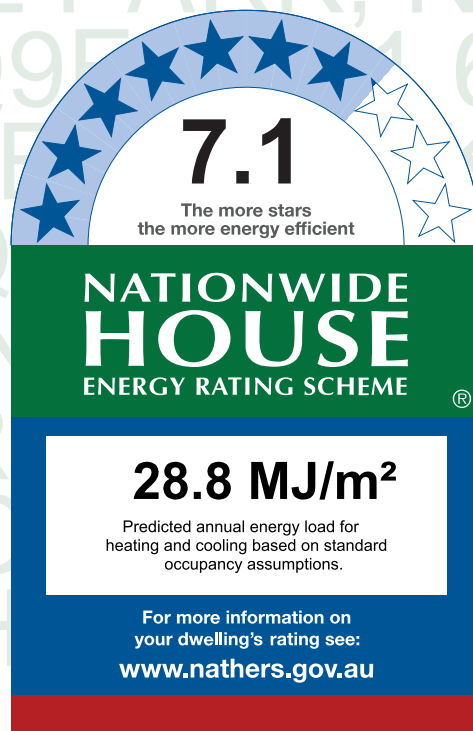
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two.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

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	19.8	9.0
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-QQ9EA6-01>.

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.

## 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 Certificate?

☐☐☐☐☐

#### Roof

Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?

☐☐☐☐☐

#### Apartment entrance doors (NCC Class 2 assessments only)

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

☐☐☐☐

#### Exposure\*

Has the appropriate exposure type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

☐☐☐☐

#### Heating and cooling load limits\*

Do the load limits settings (shown on page 1) match what is shown 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?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--	--------------------------	--------------------------	--------------------------	--------------------------

Insulation installation method

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

Building sealing

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

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"/>			
--	--------------------------	--------------------------	--	--	--

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

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2022 > Volume 2 > H5P2 (fall prevention barriers) are in place. North Pointer shown on the plans has been calculated to be the True North. No trees have been modelled as no relevant information has been provided. For all insulation installed the rating called out in the NatHERS is the primary factor and not its description. If these are not in place then this NatHERS must be revised.

## Room schedule

Room	Zone Type	Area (m <sup>2</sup> )
GARAGE	Garage	75.82
STORAGE	Unconditioned	15.21
WALKWAY	Day Time	13.08
ENTRY	Day Time	36.98
KLD	Kitchen/Living	81.66
P'TRY	Day Time	5.49
STUDY	Day Time	8.40
GUEST BED	Bedroom	12.39
WIR G	Night Time	4.33
ENS G	Night Time	4.24
PDR	Unconditioned	4.52
L'DRY	Unconditioned	7.69
WCext	Unconditioned	3.63
STAIRS/HALL FF	Day Time	36.14
SITTING	Living	33.13
MASTER	Bedroom	19.25
ENS M	Night Time	6.24
BED 2	Bedroom	19.98
HIS HERS	Night Time	13.99
BED 3	Bedroom	16.47
BED 4	Bedroom	15.64
BATH FF	Unconditioned	6.99



## 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
PVC-002-04 W	uPVC B SG Low Solar Gain Low-E	3.70	0.38	0.36	0.40
PVC-003-01 W	uPVC A DG Air Fill Clear-Clear	3.00	0.48	0.46	0.50
PVC-004-01 W	uPVC B DG Air Fill Clear-Clear	3.00	0.56	0.53	0.59
PVC-004-03 W	uPVC B DG Air Fill High Solar Gain low-E -Clear	2.30	0.32	0.30	0.34
PVC-004-04 W	uPVC B DG Air Fill Low Solar Gain low-E -Clear	2.30	0.25	0.24	0.26

### Custom\* windows

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

None

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orient-ation	Shading device*
BATH FF	PVC-002-04 W	W14	600	1210	Sliding	45	W	None
BED 2	PVC-002-04 W	W10	1200	2170	Sliding	45	E	None
BED 2	PVC-002-04 W	D20	2400	3576	Sliding Door	45	S	None
BED 3	PVC-002-04 W	W11-W	1800	3200	Sliding	30	E	None
BED 3	PVC-002-04 W	W11-S	1800	1708	Sliding	45	S	None
BED 4	PVC-002-04 W	W13	600	2200	Sliding	45	W	None
BED 4	PVC-002-04 W	W12	1800	2170	Sliding	45	S	None
ENS G	PVC-002-04 W	W08	600	610	Sliding Door	45	S	None
ENS M	PVC-002-04 W	W09	1800	610	Double Hung	45	N	None
ENS M	PVC-002-04 W	W16	600	1200	Sliding	45	S	None
ENTRY	PVC-004-04 W	Wentry1-N	3000	1800	Fixed	0	N	None
ENTRY	PVC-003-01 W	D18	2091	1921	Hinged Door	45	N	None
ENTRY	PVC-004-04 W	Wentry2-N	1159	1921	Fixed	0	N	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*
ENTRY	PVC-004-04 W	Wentry-W	3000	4380	Fixed	0	W	None
GUEST BED	PVC-002-04 W	D09	2400	2400	Sliding Door	45	N	None
KLD	PVC-004-01 W	W06	2057	850	Double Hung	45	E	None
KLD	PVC-004-01 W	W06	2057	850	Double Hung	45	E	None
KLD	PVC-004-01 W	W06	2057	850	Double Hung	45	E	None
KLD	PVC-003-01 W	D03	2400	4800	Bi-fold	90	S	None
KLD	PVC-004-01 W	W05	2400	6475	Sliding	45	S	None
KLD	PVC-004-01 W	W03	514	3010	Fixed	0	W	None
MASTER	PVC-002-04 W	W09	1800	610	Double Hung	45	N	None
MASTER	PVC-002-04 W	D09	2400	2400	Sliding Door	45	N	None
P'TRY	PVC-002-04 W	W02	1029	1210	Double Hung	45	W	None
PDR	PVC-002-04 W	W07	600	850	Sliding	45	E	None
SITTING	PVC-002-04 W	W15	1800	1293	Fixed	0	W	None
STAIRS/HALL FF	PVC-004-03 W	Wvoid-N	3000	3720	Fixed	0	N	None
STAIRS/HALL FF	PVC-004-03 W	Wvoid-W	3000	4380	Fixed	0	W	None
STUDY	PVC-004-01 W	W01-b	3000	1300	Double Hung	45	W	None
STUDY	PVC-004-01 W	W01-a	3000	2800	Sliding	45	N	None
WCext	PVC-002-04 W	W08	600	600	Sliding	45	W	None
WCext	PVC-002-04 W	W04	600	850	Sliding	45	S	None
WIR G	PVC-002-04 W	W09	1800	610	Double Hung	45	N	None
WIR G	PVC-002-04 W	W09	1800	610	Double Hung	45	N	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
VEL-011-02 W	FS - Fixed Skylight DG 3mm LoE 366 / 10.5mm Argon Gap / 3mm Clear	2.66	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orient-ation	Outdoor shade	Indoor shade
BATH FF	VEL-011-02 W	SK	0	600	1600	W	None	HB
HIS HERS	VEL-011-02 W	SK	0	1600	600	E	None	HB
SITTING	VEL-011-02 W	SK	0	1600	600	W	None	HB
SITTING	VEL-011-02 W	SK	0	1600	600	W	None	HB

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
None								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
GARAGE	2400	5000	0	N
L'DRY	2400	820	90	E
SITTING	2400	2400	0	N
WCext	2400	820	0	W



## External wall type

Wall ID	Wall Type	Solar absorptance	Wall Colour	Bulk insulation (R-value)	Reflective wall wrap*
DBL-BRICK-110-50-110-RD-A	Double Brick - 110mm/50mmair/110mm Rendered both sides	0.30	Light	2.90	No
DBL-BRICK-110-50-110-RD-B	Double Brick - 110mm/50mmair/110mm Rendered both sides	0.30	Light	0.00	No
DINCEL 200/RD-A	DINCEL/RD	0.50	Medium	2.15	No
DINCEL 200/RD-B	DINCEL/RD	0.30	Light	2.15	No
DINCEL-200-EXP-A	DINCEL 200mm Fully Core Filled - Exposed	0.50	Medium	0.00	No
DINCEL-200-EXP-B	DINCEL 200mm Fully Core Filled - Exposed	0.30	Light	0.00	No
SB-RD	Single Brick wall - Rendered	0.30	Light	1.43	No

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* projection (mm)	Vertical shading feature
BATH FF	DBL-BRICK-110-50-110-RD-A	2600	3340	W		No
BED 2	DBL-BRICK-110-50-110-RD-A	2600	4550	E		Yes
BED 2	DBL-BRICK-110-50-110-RD-A	2600	4849	S	1507	Yes
BED 2	SB-RD	900	4188	N	1200	Yes
BED 3	DBL-BRICK-110-50-110-RD-A	2600	5006	E	4982	Yes
BED 3	DBL-BRICK-110-50-110-RD-A	2600	3291	S		No
BED 4	DBL-BRICK-110-50-110-RD-A	2600	5006	W		No
BED 4	DBL-BRICK-110-50-110-RD-A	2600	3124	S		No
ENS G	DBL-BRICK-110-50-110-RD-A	3000	1697	E		Yes
ENS G	DBL-BRICK-110-50-110-RD-A	3000	2151	S		Yes
ENS M	DBL-BRICK-110-50-110-RD-A	3000	1474	N	2753	Yes
ENS M	DBL-BRICK-110-50-110-RD-A	3000	4230	E		Yes
ENS M	DBL-BRICK-110-50-110-RD-A	3000	1474	S		Yes
ENTRY	DBL-BRICK-110-50-110-RD-A	3000	4176	N		Yes
ENTRY	DBL-BRICK-110-50-110-RD-A	3000	1371	E	6253	Yes
ENTRY	DBL-BRICK-110-50-110-RD-A	3000	4648	W		Yes

\* Refer to glossary.

## External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
GARAGE	DINCEL-200-EXP-A	3050	6232	E		No
GARAGE	DINCEL-200-EXP-A	3050	5580	S		No
GARAGE	DINCEL-200-EXP-B	3050	2002	N		No
GARAGE	DINCEL-200-EXP-B	3050	737	W		No
GARAGE	DINCEL-200-EXP-B	3050	5729	N	365	Yes
GARAGE	DINCEL-200-EXP-A	3050	5500	E		No
GARAGE	DINCEL-200-EXP-A	3050	2151	S		No
GUEST BED	DBL-BRICK-110-50-110-RD-A	3000	3395	N	3475	Yes
HIS HERS	DBL-BRICK-110-50-110-RD-A	3000	3597	E		Yes
KLD	DBL-BRICK-110-50-110-RD-A	3000	6198	E		Yes
KLD	DBL-BRICK-110-50-110-RD-A	3000	13700	S		Yes
KLD	DBL-BRICK-110-50-110-RD-A	3000	5140	W		Yes
KLD	DBL-BRICK-110-50-110-RD-A	3000	2151	N		Yes
L'DRY	DBL-BRICK-110-50-110-RD-A	3000	1909	E		Yes
MASTER	DBL-BRICK-110-50-110-RD-A	3000	4552	N	2753	Yes
MASTER	DBL-BRICK-110-50-110-RD-A	3000	563	S		Yes
P'TRY	DBL-BRICK-110-50-110-RD-A	3000	1829	W		Yes
P'TRY	DBL-BRICK-110-50-110-RD-A	3000	271	N		Yes
PDR	DBL-BRICK-110-50-110-RD-A	3000	1503	E		Yes
SITTING	DBL-BRICK-110-50-110-RD-A	2600	3124	N	3020	Yes
SITTING	DBL-BRICK-110-50-110-RD-A	2600	2986	W		No
SITTING	DBL-BRICK-110-50-110-RD-A	2600	902	E	4982	Yes
SITTING	SB-RD	900	3938	N	1200	Yes
SITTING	SB-RD	900	845	E	8719	Yes
STAIRS/HALL FF	DBL-BRICK-110-50-110-RD-A	3000	4176	N	2123	Yes

\* Refer to glossary.

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orient-ation	Horizontal shading feature* projection (mm)	Vertical shading feature
STAIRS/HALL FF	DBL-BRICK-110-50-110-RD-A	3000	630	E	6272	Yes
STAIRS/HALL FF	DBL-BRICK-110-50-110-RD-A	3000	7701	W	3253	Yes
STORAGE	DINCEL-200-EXP-A	3050	5851	W		No
STORAGE	DINCEL-200-EXP-A	3050	2599	S		No
STUDY	DBL-BRICK-110-50-110-RD-A	3000	2943	W		Yes
STUDY	DBL-BRICK-110-50-110-RD-A	3000	2853	N		Yes
WALKWAY	DINCEL 200/RD-A	3050	5034	W		No
WALKWAY	DINCEL 200/RD-B	3050	2599	N		No
WCext	DBL-BRICK-110-50-110-RD-B	3000	3129	W		Yes
WCext	DBL-BRICK-110-50-110-RD-B	3000	1160	N		Yes
WCext	DBL-BRICK-110-50-110-RD-B	3000	3129	E		Yes
WCext	DBL-BRICK-110-50-110-RD-B	3000	1160	S		Yes
WIR G	DBL-BRICK-110-50-110-RD-A	3000	1691	E		Yes
WIR G	DBL-BRICK-110-50-110-RD-A	3000	2696	N	3474	Yes

Internal wall *type*

Wall ID	Wall Type	Area (m²)	Bulk insulation
SB-RD	Single Brick wall - Rendered	209.0	0.00
SB-RD	Single Brick wall - Rendered	19.4	1.43

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
BATH FF	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.0	N/A	0.00	Tile (8mm)
BED 2	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	20.0	N/A	0.00	Tile (8mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	N/A	0.00	Tile (8mm)
BED 3	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.8	N/A	2.50	Tile (8mm)

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
BED 4	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.6	N/A	0.00	Tile (8mm)
BED 4	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	14.1	N/A	2.50	Tile (8mm)
ENS G	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.2	N/A	2.50	Tile (8mm)
ENS M	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	5.0	N/A	0.00	Tile (8mm)
ENS M	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.3	N/A	2.50	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	22.2	N/A	2.50	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.1	N/A	0.00	Tile (8mm)
ENTRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	1.7	N/A	0.15	Tile (8mm)
GARAGE	CSOG-200: Concrete Slab on Ground (200mm)	75.8	N/A	0.00	Exposed
GUEST BED	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	12.4	N/A	2.50	Tile (8mm)
HIS HERS	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	13.0	N/A	0.00	Tile (8mm)
HIS HERS	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.9	N/A	2.50	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	20.5	N/A	2.50	Tile (8mm)
KLD	CSOG-200: Concrete Slab on Ground (200mm)	58.5	N/A	0.00	Tile (8mm)
KLD	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	2.6	N/A	0.15	Tile (8mm)
L'DRY	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	7.7	N/A	0.00	Tile (8mm)
MASTER	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	15.4	N/A	0.00	Tile (8mm)
MASTER	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	3.9	N/A	2.50	Tile (8mm)
P'TRY	CSOG-200: Concrete Slab on Ground (200mm)	5.5	N/A	0.00	Tile (8mm)
PDR	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.5	N/A	0.00	Tile (8mm)
SITTING	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	32.6	N/A	0.00	Tile (8mm)
SITTING	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.5	N/A	2.50	Tile (8mm)
STAIRS/HALL FF	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	35.5	N/A	0.00	Tile (8mm)
STAIRS/HALL FF	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.2	N/A	0.00	Exposed



## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
STAIRS/HALL FF	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	0.5	N/A	2.50	Exposed
STORAGE	CSOG-200: Concrete Slab on Ground (200mm)	15.2	N/A	0.00	Exposed
STUDY	CSOG-200: Concrete Slab on Ground (200mm)	8.4	N/A	0.00	Tile (8mm)
WALKWAY	CSOG-200: Concrete Slab on Ground (200mm)	13.1	N/A	0.00	Exposed
WCext	CSOG-200: Concrete Slab on Ground (200mm)	3.6	N/A	0.00	Tile (8mm)
WIR G	SUSP-CONC-200-LINED: Suspended Concrete Slab Floor (200mm) - Lined Below	4.3	N/A	2.50	Tile (8mm)

## Ceiling type

Location	Construction	Bulk insulation (R-value)	Reflective wrap*
BATH FF	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
BED 2	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
BED 3	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
BED 4	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
ENS M	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
GARAGE	SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete Ceiling	0.00	No
HIS HERS	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
KLD	SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	3.00	No
KLD	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
MASTER	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
SITTING	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
STAIRS/HALL FF	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
STUDY	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	4.00	Yes
WCext	FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
----------	----------	------	---------------	------------------

\* Refer to glossary.

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
BATH FF	1	Downlight	190	Sealed
BATH FF	1	Exhaust Fan	350	Sealed
BED 2	3	Downlight	190	Sealed
BED 3	2	Downlight	190	Sealed
BED 4	2	Downlight	190	Sealed
ENS G	1	Downlight	190	Sealed
ENS G	1	Exhaust Fan	350	Sealed
ENS M	1	Downlight	190	Sealed
ENS M	1	Exhaust Fan	350	Sealed
ENTRY	5	Downlight	190	Sealed
GUEST BED	2	Downlight	190	Sealed
HIS HERS	2	Downlight	190	Sealed
KLD	12	Downlight	190	Sealed
KLD	1	Exhaust Fan	260	Sealed
L'DRY	1	Downlight	190	Sealed
L'DRY	1	Exhaust Fan	350	Sealed
MASTER	3	Downlight	190	Sealed
P'TRY	1	Downlight	190	Sealed
PDR	1	Downlight	190	Sealed
PDR	1	Exhaust Fan	350	Sealed
SITTING	5	Downlight	190	Sealed
STAIRS/HALL FF	5	Downlight	190	Sealed
STORAGE	2	Downlight	190	Sealed
STUDY	1	Downlight	190	Sealed
WALKWAY	2	Downlight	190	Sealed
WCext	1	Downlight	190	Sealed

\* Refer to glossary.

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed /unsealed
WIR G	1	Downlight	190	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
KLD	2	2100
SITTING	1	1400
STAIRS/HALL FF	1	2400
STUDY	1	1400

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof Colour
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	1.30	0.50	Medium
FLAT-01: Flat Framed / Skillion Metal Roof & Flat PB Ceiling	0.00	0.50	Medium
SLAB-200-CEIL-01: Concrete Slab (200mm) with Suspended PB Ceiling	0.00	0.50	Medium
SLAB-200-EXP-01: Concrete Slab (200mm) with Exposed Concrete 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
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.