

# Assessor Certificate

## Single Dwelling

Non-Regulatory Document



<b>Assessor</b>			
<b>Name:</b>	Raymond Sleiman	<b>Company:</b>	Taylor Smith Consulting
<b>Address:</b>	PO Box 5044 Kingsdene NSW 2118		
<b>Phone:</b>	02 9890 8002	<b>Email:</b>	rsleiman@taylorsmith.com.au
<b>Client</b>			
<b>Name:</b>	Joseph Sukarman	<b>Company:</b>	Walter Barda Design
<b>Address:</b>	Suite 2.04, 13-15 Wentworth Avenue, Sydney NSW 2000		
<b>Phone:</b>	02 9264 4240	<b>Email:</b>	joseph@walterbardadesign.com
<b>Project</b>			
<b>Address:</b>	1107 Oxford Falls Rd, Frenchs Forest NSW 2086		
<b>Applicant:</b>	Toursounoglou	<b>LGA:</b>	Northern Beaches
<b>Assessment</b>			
<b>Date:</b>	05/08/2020	<b>File ref:</b>	2020374
<b>Software:</b>	AccuRate	<b>Version:</b>	2.4.3.21
<b>Climate Zone:</b>	56		
<b>Documentation</b>			
All details, upon which this assessment has been based, are included in the project documentation that has been stamped and signed by the Assessor issuing this certificate, as identified below:			

### Thermal Performance Spec:

Attached, Affixed to drawings Page#: A301

### Drawings: (Title, Ref.#, Revision, Issue date, etc)

2020\_02, 27.08.2020, DA Issue B

<b>Assessor Certificate</b>	<b>DMN Assessor #</b>	<b>12/1472</b>	<b>Certificate #</b>	<b>0005149109-01</b>	<b>Issued:</b>	<b>27/08/20</b>
<b>THERMAL COMFORT – Simulation Method</b>						

The details below must be entered into the BASIX Assessment

<b>Area Calculations (m<sup>2</sup>)</b>	
<b>Net Conditioned Floor Area</b>	478
<b>Net Unconditioned Floor Area</b>	0
<b>Concessions / Ventilation Bonus</b>	
<b>Eligible Concessions:</b>	None

## Predicted annual energy loads (MJ/m<sup>2</sup>.annum)

Heating:	38
Cooling: (sensible + latent)	23
Total:	61
Star Rating:	5.3



## Thermal Performance Specifications

These are the Specifications upon which the Certified Assessment is based. If details included in these Specifications vary from other drawings or written specifications, these Specifications shall take precedence. If only one specification option is detailed for a building element, that specification must apply to all instances of that element for the project. If alternate specifications are detailed for a building element, the location and extent of alternate specifications must be detailed below and / or clearly indicated on referenced documents

Windows	Product ID	Glass	Frame	U value	SHGC	Area M <sup>2</sup>	Detail
		Single Clear	Aluminium	6.7	0.57		W1.1
		Double Clear	Aluminium	4.8	0.51		Awning, Casement
		Double Clear	Aluminium	4.8	0.59		All other Windows & Doors

Skylights	Product ID	Glass	Frame	U value	SHGC	Area M <sup>2</sup>	Detail
Velux		Double Low-E	Timber	2.6	0.24		As per plans

Window and skylight U and SHGC values, if specified, are according to AFRC. Alternate products or specifications may be used if their U value is lower, and the SHGC value is less than 10% higher or lower, than the U and SHGC values of the product specified above.

External walls	Construction	Insulation	Colour – solar abs.	Detail
Brick Cavity / Timber Cladding		R1.0 EPS	Medium – SA 0.475–0.7	Insulation External on Brick (Existing)
Timber Cladding		R2.0 Bulk	Medium – SA 0.475–0.7	As per plans (New)

Internal walls	Construction	Insulation	Detail
Plasterboard on Studs		None	As per plans
Plasterboard on Studs		R2.0 Bulk	Garage
Brick Plasterboard		None	As per plans
Brick Cavity Plasterboard		None	As per plans

Floors	Construction	Insulation	Covering	Detail
Concrete		None	None	Garage
Concrete		None	Ceramic Tiles / Timber	Existing First Floor
Timber		None	Ceramic Tiles / Timber	New First Floor

Ceilings	Construction	Insulation	Detail
Plasterboard		R3.0 Bulk	Metal Roof / Terrace Above Only
Concrete		None	As per plans

Roof	Construction	Insulation	Colour – solar abs.	Detail
Metal Deck		R1.0 Anticon	Medium – SA 0.475–0.7	As per plans
Concrete		R3.0 Bulk	Medium – SA 0.475–0.7	Family Terrace (Insulation in Ceiling Below)

Overshadowing	Overshadowing structures	Overshadowing trees
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## Orientation, Exposure, Ventilation and Infiltration

Orientation of nominal north:	10
Terrain category:	Suburban
Seals to windows and doors:	Yes
Exhaust fans sealed:	Yes
Lighting plan provided:	No
Recessed downlights:	No



**0005149109-01 27 Aug 2020**

**Assessor** Raymond Sleiman

**Accreditation No.** DMN12/1472

**Address** 1107 Oxford Falls Road,  
Frenchs Forest, NSW, 2086

[www.nathers.gov.au](http://www.nathers.gov.au)

[www.hstar.com.au](http://www.hstar.com.au)



# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. 0005149109-01

Generated on 27 Aug 2020 using AccuRate Sustainability V2.4.3.21

### Property

**Address** 1107 Oxford Falls Road , Frenchs Forest  
, NSW , 2086

**Lot/DP** Lot X DP 395065

**NCC Class\*** 1a

**Type** Renovation

### Plans

**Main Plan** 2020\_02, 27.08.2020

**Prepared by** Joseph Sukarman

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>	<b>Exposure Type</b>
Conditioned* 477.7	Suburban
Unconditioned* 77.3	<b>NatHERS climate zone</b>
Total 555.0	56
Garage 77.3	



### Accredited assessor

**Name** Raymond Sleiman

**Business name** Taylor Smith Consulting

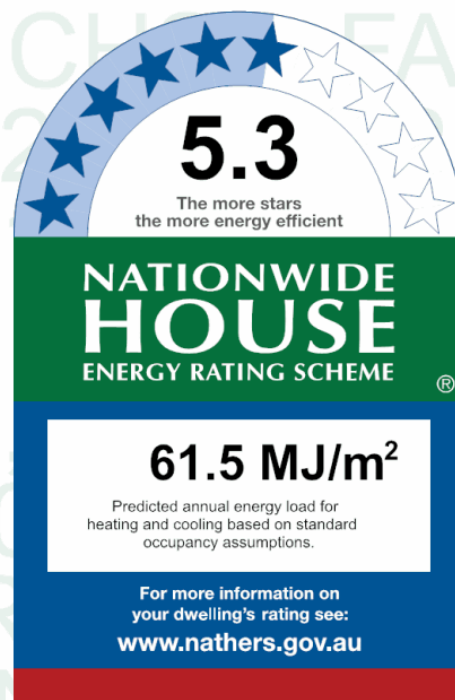
**Email** rsleiman@taylorsmith.com.au

**Phone** 02 9890 8002

**Accreditation No.** DMN/12/1472

**Assessor Accrediting Organisation**  
Design Matters National

**Declaration of interest** Declaration completed: no conflicts



### Thermal performance

<b>Heating</b>	<b>Cooling</b>
38.4 MJ/m <sup>2</sup>	23.1 MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [www.hstar.com.au/QR/Generate?p=RleGFFmns](http://www.hstar.com.au/QR/Generate?p=RleGFFmns). When using either link, ensure you are visiting [www.hstar.com.au](http://www.hstar.com.au)



### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

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

## Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

### Apartment entrance doors

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

### Exposure\*

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

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional notes

## Window and glazed door *type and performance*

### Default\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-003-01 A	Aluminium A DG Air Fill Clear-Clear	4.8	0.51	0.48	0.54
ALM-004-01 A	Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

### Custom\* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
GARAGE	ALM-001-01 A	W1.1	1300	4280	Awning	66	W	None
FOYER/PWD	ALM-004-01 A	W1.9	2300	1290	Louvre	90	NW	None
FOYER/PWD	ALM-003-01 A	D1.06	2350	1100	Casement	90	N	None
FOYER/PWD	ALM-004-01 A	W1.10	2300	1290	Louvre	90	NE	None
LIBRARY	ALM-004-01 A	W1.2	960	189	Other	00	W	None
PANTRY	ALM-003-01 A	D1.04	2200	830	Casement	90	S	None
STUDY	ALM-003-01 A	W1.11	1800	1780	Awning	79	N	None
STUDY	ALM-003-01 A	D1.09	2100	1700	Casement	90	S	None
KITCHEN/DINING	ALM-004-01 A	W1.8	1800	1500	Other	00	N	None
KITCHEN/DINING	ALM-003-01 A	D1.05	2300	1400	Casement	90	N	None
KITCHEN/DINING	ALM-003-01 A	D1.04	2300	1400	Casement	90	N	None
KITCHEN/DINING	ALM-003-01 A	D1.03	2300	1400	Casement	90	N	None
KITCHEN/DINING	ALM-003-01 A	D1.02	2300	1400	Casement	90	N	None
KITCHEN/DINING	ALM-004-01 A	W1.7	1800	1500	Other	00	N	None
KITCHEN/DINING	ALM-004-01 A	W1.5	2300	1290	Louvre	90	NW	None
KITCHEN/DINING	ALM-003-01 A	D1.01	2300	1500	Casement	90	N	None
KITCHEN/DINING	ALM-004-01 A	W1.6	2300	1290	Louvre	90	NE	None
KITCHEN/DINING	ALM-004-01 A	W1.4	2300	1290	Louvre	90	W	None
KITCHEN/DINING	ALM-004-01 A	W1.3	2300	1290	Louvre	90	SW	None
ENS/WIR 3	ALM-004-01 A	W1.14	900	850	Louvre	90	N	None
ENS/WIR 3	ALM-003-01 A	W1.15	1800	745	Awning	79	E	None
GAMES	ALM-004-01 A	W1.12	1800	850	Louvre	90	N	None
GAMES	ALM-003-01 A	W1.13	1800	750	Awning	79	E	Miniature Louvres
GAMES	ALM-004-01 A	D1.07	2140	5710	Sliding	45	N	Miniature Louvres
GAMES	ALM-004-01 A	D1.08	2140	4300	Sliding	45	S	Miniature Louvres
BED 6	ALM-003-01 A	W1.16	1800	1490	Awning	79	NE	None
BED 6	ALM-003-01 A	W1.17	1800	1490	Awning	79	E	None
BED 6	ALM-003-01 A	W1.18	1800	1490	Awning	79	SE	None
BED 6	ALM-004-01 A	W1.19	1800	850	Louvre	90	W	None
GALLERY	ALM-003-01 A	W2.6	1400	760	Awning	67	N	None
BED 2	ALM-003-01 A	W2.5	1400	2700	Awning	10	N	None
BED 3	ALM-004-01 A	W2.22	700	1920	Sliding	90	S	None
BED 3	ALM-004-01 A	D2.04	2400	2480	Sliding	45	W	None
BED 1	ALM-004-01 A	D2.01	2400	2910	Sliding	45	N	None
BED 1	ALM-003-01 A	W2.7	1400	590	Awning	10	N	None
ENS 1	ALM-004-01 A	W2.20	700	800	Other	00	S	None
WIR 1	ALM-004-01 A	W2.19	700	1700	Other	00	S	None



Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
BATH 1	ALM-004-01 A	W2.21	700	1700	Other	00	S	None
VOID	ALM-004-01 A	W2.1	1400	1370	Other	00	N	None
VOID	ALM-004-01 A	W2.2	1400	1370	Other	00	N	None
VOID	ALM-004-01 A	W2.3	1400	1370	Other	00	N	None
VOID	ALM-004-01 A	W2.4	1400	1370	Other	00	N	None
VOID	ALM-004-01 A	W2.23	1400	1000	Other	00	S	None
VOID	ALM-004-01 A	W2.24	1400	1370	Other	00	S	None
VOID	ALM-004-01 A	W2.25	1400	1370	Other	00	S	None
VOID	ALM-004-01 A	W2.26	1400	1370	Other	00	S	None
FAMILY	ALM-004-01 A	D2.03	2400	2480	Sliding	45	N	None
FAMILY	ALM-004-01 A	W2.16	1900	1700	Other	00	S	None
FAMILY	ALM-004-01 A	W2.17	1900	1700	Other	00	S	None
BATH 2	ALM-004-01 A	W2.18	700	800	Other	00	S	None
BED 4	ALM-003-01 A	D2.02	2400	1780	Casement	90	N	None
ART	ALM-004-01 A	W2.8	1400	850	Louvre	90	N	None
ART	ALM-003-01 A	W2.9	1400	850	Awning	67	E	None
BED 5	ALM-003-01 A	W2.12	1900	1490	Awning	10	NE	None
BED 5	ALM-003-01 A	W2.13	1900	1490	Awning	10	E	None
BED 5	ALM-003-01 A	W2.14	1900	1490	Awning	10	SE	None
BED 5	ALM-004-01 A	W2.15	1900	850	Louvre	90	W	None
ENS/WIR 2	ALM-004-01 A	W2.10	900	850	Louvre	90	N	None
ENS/WIR 2	ALM-004-01 A	W2.11	1900	745	Other	00	E	None

## Roof window type and performance

### Default\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.6	0.24	0.24	0.24

## Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
FOYER/PWD	VEL-011-01 W	SK1	0	1063	1063	N	None	None

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
GALLERY	VEL-011-01 W	SK2	0	1109	1109	S	None	None
GALLERY	VEL-011-01 W	SK3	0	1109	1109	S	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
GARAGE	2100	820	100	W
GARAGE	2300	6500	100	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-001	Timber/Plasterboard	50	Medium	Glass fibre batt: R2.0	No
EW-002	Timber/Plasterboard	50	Medium		No
EW-003	Timber/Brick wall/Plasterboard	50	Medium	Polystyrene expanded: R1.0	Yes

## External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
GARAGE	EW-002	2500	8010	W	750	Yes
GARAGE	EW-002	2500	9650	S	750	Yes
GARAGE	EW-002	2500	8010	E	750	Yes
FOYER/PWD	EW-001	2400	1650	NW	750	Yes
FOYER/PWD	EW-001	2400	1650	N	750	Yes
FOYER/PWD	EW-001	2400	1650	NE	750	Yes
FOYER/PWD	EW-001	2400	900	N		No
LDRY/DRY	EW-001	2400	3910	S		No
LDRY/DRY	EW-001	2400	1800	E		No
LIBRARY	EW-001	2400	4110	S		No

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
LIBRARY	EW-001	2400	2660	W		No
PANTRY	EW-001	2400	4000	S		No
STUDY	EW-003	2400	4250	N		No
STUDY	EW-003	2400	2200	S		No
KITCHEN/DINING	EW-001	2400	10900	N	2050	Yes
KITCHEN/DINING	EW-001	2400	1650	NW	750	Yes
KITCHEN/DINING	EW-001	2400	1650	N	750	Yes
KITCHEN/DINING	EW-001	2400	1650	NE	750	Yes
KITCHEN/DINING	EW-001	2400	1650	W	750	Yes
KITCHEN/DINING	EW-001	2400	1650	SW	750	Yes
KITCHEN/DINING	EW-001	2400	1500	S	750	Yes
KITCHEN/DINING	EW-001	2400	3500	W		No
KITCHEN/DINING	EW-001	2400	1700	SW		No
KITCHEN/DINING	EW-001	2400	1900	S		No
ENS/WIR 3	EW-001	2400	3300	N		No
ENS/WIR 3	EW-001	2400	2200	E		No
GAMES	EW-003	2400	1870	N		No
GAMES	EW-003	2400	950	E		No
GAMES	EW-003	2400	6420	N	1300	Yes
GAMES	EW-003	2400	2300	N		No
GAMES	EW-003	2400	6570	S		No
BED 6	EW-001	2400	1600	NE		No
BED 6	EW-001	2400	1600	E		No
BED 6	EW-001	2400	1600	SE		No
BED 6	EW-001	2400	3300	S		No
BED 6	EW-001	2400	1600	W		No
GALLERY	EW-001	2675	1000	N	750	Yes
BED 2	EW-001	2675	3950	N	750	Yes
BED 3	EW-001	2675	3330	S	750	Yes
BED 3	EW-001	2675	2700	W	750	Yes
BED 1	EW-001	2675	3910	N	750	Yes
ENS 1	EW-001	2675	3910	S	750	Yes
ENS 1	EW-001	2675	1800	E	750	Yes
WIR 1	EW-003	2675	2700	S	750	Yes
BATH 1	EW-001	2675	2450	S	750	Yes
VOID	EW-001	2675	6900	N	750	Yes
VOID	EW-001	2675	1700	NW	750	Yes
VOID	EW-001	2675	3400	W	750	Yes
VOID	EW-001	2675	1700	SW	750	Yes



Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
VOID	EW-001	2675	6100	S	750	Yes
FAMILY	EW-003	2675	6520	N	2250	Yes
FAMILY	EW-003	2675	800	E	750	Yes
FAMILY	EW-003	2675	6520	S	750	Yes
BATH 2	EW-003	2675	3200	S	750	Yes
BED 4	EW-003	2675	3570	N	750	Yes
BED 4	EW-003	2675	1480	W	750	Yes
ART	EW-003	2675	2300	N	750	Yes
ART	EW-003	2675	2450	E	750	Yes
BED 5	EW-001	2675	1600	NE	750	Yes
BED 5	EW-001	2675	1600	E	750	Yes
BED 5	EW-001	2675	1600	SE	750	Yes
BED 5	EW-001	2675	3300	S	750	Yes
BED 5	EW-001	2675	1600	W	750	Yes
ENS/WIR 2	EW-001	2675	3300	N	750	Yes
ENS/WIR 2	EW-001	2675	2200	E	750	Yes

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
IW-001	Plasterboard/Brick wall	74.37	
IW-002	Plasterboard	200.05	
IW-003	Plasterboard	23.47	Glass fibre batt: R2.0
IW-004	Plasterboard/Brick wall	67.66	

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation (R-value)	Added insulation (R-value)	Covering
GARAGE/Ground	Concrete Slab 200 mm: bare/bare	77.30			
FOYER/PWD/Ground	Concrete Slab 200 mm: ceramic tiles/bare	19.40			Ceramic tile
TV ROOM/Ground	Concrete Slab 200mm: timber/bare	23.60			
LDRY/DRY/Ground	Concrete Slab 200 mm: ceramic tiles/bare	14.00			Ceramic tile
LIBRARY/Ground	Concrete Slab 200 mm: ceramic tiles/bare	10.90			Ceramic tile
PANTRY/Ground	Concrete Slab 200 mm: ceramic tiles/bare	15.60			Ceramic tile
STUDY/Ground	Concrete Slab 200mm: timber/bare	32.00			
STUDY/Ground	Concrete Slab 200 mm: ceramic tiles/bare	9.20			Ceramic tile
KITCHEN/DINING/Ground	Concrete Slab 200mm: timber/bare	34.00			
KITCHEN/DINING/Ground	Concrete Slab 200 mm: ceramic tiles/bare	69.80			Ceramic tile
ENS/WIR 3/Ground	Concrete Slab 200 mm: ceramic tiles/bare	4.00			Ceramic tile

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
ENS/WIR 3/Ground	Concrete Slab 200mm: timber/bare	3.00			
GAMES/Ground	Concrete Slab 200mm: timber/bare	51.80			
BED 6/Ground	Concrete Slab 200mm: timber/bare	17.00			
GALLERY/KITCHEN/DINING	Timber (hardwood): timber/air gap/plasterboard	2.30			
GALLERY/TV ROOM	Timber (hardwood): timber/air gap/plasterboard	3.50			
GALLERY/FOYER/PWD	Timber (hardwood): timber/air gap/plasterboard	2.70			
BED 2/KITCHEN/DINING	Timber (hardwood): timber/air gap/plasterboard	13.50			
BED 3/PANTRY	Timber (hardwood): timber/air gap/plasterboard	9.50			
BED 3/KITCHEN/DINING	Timber (hardwood): timber/air gap/plasterboard	4.30			
BED 1/TV ROOM	Timber (hardwood): timber/air gap/plasterboard	18.80			
BED 1/FOYER/PWD	Timber (hardwood): timber/air gap/plasterboard	6.40			
ENS 1/LDRY/DRY	Timber (hardwood): ceramic tiles/air gap/plasterboard	7.00			Ceramic tile
ENS 1/TV ROOM	Timber (hardwood): ceramic tiles/air gap/plasterboard	1.20			Ceramic tile
WIR 1/STUDY	Concrete Slab 200mm: timber/plasterboard	7.80			
BATH 1/PANTRY	Timber (hardwood): ceramic tiles/air gap/plasterboard	6.00			Ceramic tile
VOID/KITCHEN/DINING	Timber (hardwood): timber/air gap/plasterboard	46.00			
FAMILY/GAMES	Concrete Slab 200mm: timber/plasterboard	36.70			
FAMILY/STUDY	Concrete Slab 200mm: timber/plasterboard	7.40			
BATH 2/STUDY	Concrete Slab 200 mm: ceramic tiles/bare	4.90			Ceramic tile
BED 4/STUDY	Concrete Slab 200mm: timber/plasterboard	12.90			
WIR 4/STUDY	Concrete Slab 200mm: timber/plasterboard	3.00			
ART/GAMES	Concrete Slab 200mm: timber/plasterboard	5.20			
ART/STUDY	Concrete Slab 200mm: timber/plasterboard	3.90			
BED 5/BED 6	Timber (hardwood): timber/air gap/plasterboard	17.00			
ENS/WIR 2/ENS/WIR 3	Timber (hardwood): ceramic tiles/air gap/plasterboard	7.00			Ceramic tile
ROOF SPACE/BED 3	Plasterboard 13 mm + R3.0 bulk insulation	13.80		R3.0	
ROOF SPACE/GALLERY	Plasterboard 13 mm + R3.0 bulk insulation	6.00		R3.0	
ROOF SPACE/BED 1	Plasterboard 13 mm + R3.0 bulk insulation	25.20		R3.0	
ROOF SPACE/ENS 1	Plasterboard 13 mm + R3.0 bulk insulation	8.20		R3.0	
ROOF SPACE/WIR 1	Plasterboard 13 mm + R3.0 bulk insulation	7.80		R3.0	
ROOF SPACE/BATH 1	Plasterboard 13 mm + R3.0 bulk insulation	6.00		R3.0	
ROOF SPACE/BED 2	Plasterboard 13 mm + R3.0 bulk insulation	13.50		R3.0	
ROOF SPACE/VOID	Plasterboard 13 mm + R3.0 bulk insulation	46.00		R3.0	
ROOF SPACE/BED 4	Plasterboard 13 mm + R3.0 bulk insulation	12.90		R3.0	
ROOF SPACE/WIR 4	Plasterboard 13 mm + R3.0 bulk insulation	3.00		R3.0	
ROOF SPACE/BATH 2	Plasterboard 13 mm + R3.0 bulk insulation	4.90		R3.0	
ROOF SPACE/FAMILY	Plasterboard 13 mm + R3.0 bulk insulation	44.20		R3.0	
ROOF SPACE/ART	Plasterboard 13 mm + R3.0 bulk insulation	9.10		R3.0	
ROOF SPACE/BED 5	Plasterboard 13 mm + R3.0 bulk insulation	17.00		R3.0	

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
ROOF SPACE/ENS/WIR 2	Plasterboard 13 mm + R3.0 bulk insulation	7.00		R3.0	
ROOF SPACE/GARAGE	Plasterboard 13 mm	77.30			

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
ROOF SPACE/GARAGE	Plasterboard 13 mm		No
BED 1/FOYER/PWD	Timber (hardwood): timber/air gap/plasterboard		No
GALLERY/FOYER/PWD	Timber (hardwood): timber/air gap/plasterboard		No
ENS 1/TV ROOM	Timber (hardwood): ceramic tiles/air gap/plasterboard		No
BED 1/TV ROOM	Timber (hardwood): timber/air gap/plasterboard		No
GALLERY/TV ROOM	Timber (hardwood): timber/air gap/plasterboard		No
ENS 1/LDRY/DRY	Timber (hardwood): ceramic tiles/air gap/plasterboard		No
BATH 1/PANTRY	Timber (hardwood): ceramic tiles/air gap/plasterboard		No
BED 3/PANTRY	Timber (hardwood): timber/air gap/plasterboard		No
BED 4/STUDY	Concrete Slab 200mm: timber/plasterboard		No
WIR 4/STUDY	Concrete Slab 200mm: timber/plasterboard		No
ART/STUDY	Concrete Slab 200mm: timber/plasterboard		No
FAMILY/STUDY	Concrete Slab 200mm: timber/plasterboard		No
WIR 1/STUDY	Concrete Slab 200mm: timber/plasterboard		No
BATH 2/STUDY	Concrete Slab 200 mm: ceramic tiles/bare		No
GALLERY/KITCHEN/DINING	Timber (hardwood): timber/air gap/plasterboard		No
BED 2/KITCHEN/DINING	Timber (hardwood): timber/air gap/plasterboard		No
BED 3/KITCHEN/DINING	Timber (hardwood): timber/air gap/plasterboard		No
VOID/KITCHEN/DINING	Timber (hardwood): timber/air gap/plasterboard		No
ENS/WIR 2/ENS/WIR 3	Timber (hardwood): ceramic tiles/air gap/plasterboard		No
ART/GAMES	Concrete Slab 200mm: timber/plasterboard		No
FAMILY/GAMES	Concrete Slab 200mm: timber/plasterboard		No
BED 5/BED 6	Timber (hardwood): timber/air gap/plasterboard		No
ROOF SPACE/GALLERY	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/BED 2	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/BED 3	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/BED 1	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/ENS 1	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/WIR 1	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/BATH 1	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/VOID	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/FAMILY	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/BATH 2	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
ROOF SPACE/BED 4	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/WIR 4	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/ART	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/BED 5	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No
ROOF SPACE/ENS/WIR 2	Plasterboard 13 mm + R3.0 bulk insulation	R3.0	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm <sup>2</sup> )	Sealed/unsealed
FOYER/PWD	1	Ceiling exhaust fan	160	Sealed
LDRY/DRY	1	Ceiling exhaust fan	160	Sealed
STUDY	1	Ceiling exhaust fan	160	Sealed
KITCHEN/DINING	1	Ceiling exhaust fan	200	Sealed
ENS 1	1	Ceiling exhaust fan	160	Sealed
BATH 1	1	Ceiling exhaust fan	160	Sealed
BATH 2	1	Ceiling exhaust fan	160	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
METAL ROOF-A021 #E015 © Horiz pitch Colourbond steel roof + Anticon R1.0 insul with R3.0 bulk insul + Plasterb'd ceiling under	R4.0	50	Medium
R/S_ROOF-A031 #3017 © 22.5 deg Colourbond steel roof + Anticon R1.0 insul with no ceiling under	R1.0	50	Medium
BALC_ROOF-B026 #1004 © Framed roof with w/p membrane and tiles-R3.0 bulk ins_pb ceiling under	R3.0	50	Medium
FAM TERRACE_ROOF-B013.rof #2017 © Concrete slab 200mm - Drained Tile walking surface - R3.0 insulation under slab - Susp. Ceiling under	R3.0	50	Medium

## Explanatory notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

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

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

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<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, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<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>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>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 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 10m 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>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>Reflective wrap</b> (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.
<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 device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<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</b> (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.
<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).