



Harrison Architecture Proposed Residential Development

To be built at 50 Minkara Road, Bayview NSW 2104

Issue	File Ref	Description	Author	Date
A	19-0682	NatHERS Thermal Comfort and BASIX Assessment	AG/HE	30/03/2020
B	20-0680	Update to reflect design changes	HE	16/07/2020

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Harrison Architecture. 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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Accreditation Number: HERA10033

BASIX Details:

NatHERS Certificate Number: 0004717187-02

BASIX adjusted conditioned area: 333m²

BASIX adjusted un-conditioned area: 61m²

Area adjusted heating load: 38.3MJ/ m²/pa

Area adjusted cooling load: 24.5MJ/ m²/pa

Specification

Heating and cooling loads for the development have been determined using BERS Pro Plus 4.4 thermal comfort simulation software, and assessed under the thermal simulation method of the BASIX Protocol.

The following specification was used to achieve the thermal performance values. Modelling proxies are used at times and if the buildings element details vary the thermal performance specification below shall take precedence.

If there is a change to this specification during design or construction phases, please contact Efficient Living for advice and if required an updated Certificate will be issued.

Floors

Concrete slab on ground with R0.5 insulation to lower ground

Concrete between lower ground and ground levels, no insulation required where habitable rooms are above and below

Timber between ground and first levels, no insulation required

External Walls

Core filled concrete block with R2.5 insulation

Lightweight cladding on framed walls with R2.5 insulation (insulation only value)

Note: No insulation is required to external garage walls

External Colour:

Default colour modelled

Walls within dwellings

Plasterboard on studs

Core filled concrete block

R2.0 insulation between storage, laundry, ensuite 4, garage and habitable areas

R2.0 insulation to wall adjacent to roof cavity in entry

Glazing Doors/Windows

High performance glazing and frame system: Living kitchen dining windows, studio east glazed door and hall garden windows

U-value: 2.60 (equal to or lower than) SHGC: 0.50 (±10%)

High performance glazing and frame system: Elsewhere
U-value: 4.10 (equal to or lower than) SHGC: 0.52 ($\pm 10\%$)

Given values are AFRC total window system values (glass and frame)

Skylights

Velux fixed skylight

U-value: 2.60 SHGC: 0.24

Velux operable skylight to bathroom

U-value: 2.6 SHGC: 0.21

Ceilings

Plasterboard ceiling with R4.0 insulation (insulation only value) where concrete above

Plasterboard ceiling with R5.0 insulation (insulation only value) where metal above

No insulation required to garage ceiling

Ceiling Penetrations

Downlights as per NatHERS certificate

Roof

Concrete roof, no insulation

Metal roof with foil backed blanket ($R_{u1.5}$ and $R_{d1.5}$)

External Colour

Dark ($SA > 0.7$)

Floor coverings

As per plans

External Shading

Shading as per NatHERS stamped drawings

Ventilation

All external doors have weather seals, all exhaust fans and chimneys have dampers, and down lights proposed will have capped fittings

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0004717187-02

Generated on 16 Jul 2020 using BERS Pro v4.4.0.1 (3.21)

Property

Address 50 Minkara Road , Bayview , NSW , 2104
Lot/DP 9/28908
NCC Class* 1A
Type New Dwelling

Plans

Main Plan 19-0682
Prepared by Harrison Architecture

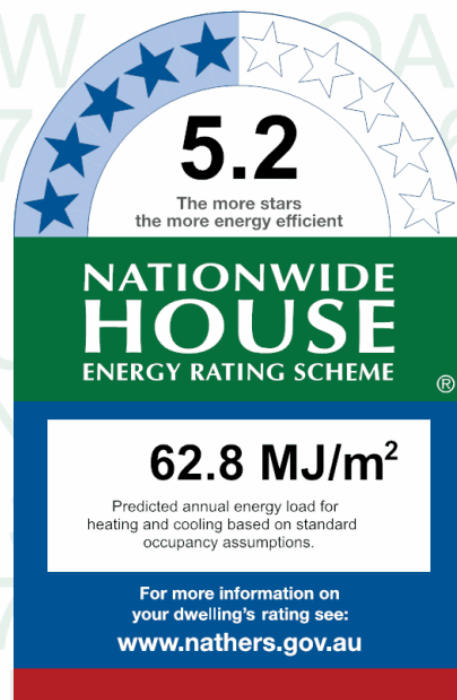
Construction and environment

Assessed floor area (m²)*	Exposure Type
Conditioned* 333.0	Exposed
Unconditioned* 99.0	NatHERS climate zone
Total 432.0	56
Garage 38.0	



Accredited assessor

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Accreditation No. HERA10033
Assessor Accrediting Organisation
HERA
Declaration of interest None



Thermal performance

Heating	Cooling
38.3	24.5
MJ/m²	MJ/m²

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 hstar.com.au/QR/Generate?p=xfgxPMTpm. When using either link, ensure you are visiting 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.

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

- Default external wall colour

- Modelling proxy core filled concrete block modelled as 190mm tilt up concrete

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-006-03 A	ALM-006-03 A Aluminium B DG Argon Fill High Solar Gain low-E -Clear	4.1	0.52	0.49	0.55
FIB-005-01 W	FIB-005-01 W Fibreglass A DG Argon Fill Clear-Clear	2.6	0.50	0.48	0.53

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*
Master Suite	ALM-006-03 A	n/a	2600	4000	n/a	60	E	No
WIR	ALM-006-03 A	n/a	1800	500	n/a	00	S	No
Ens	ALM-006-03 A	n/a	2600	2000	n/a	90	E	No
Bedroom 2	ALM-006-03 A	n/a	2600	2900	n/a	45	E	No
Ldry	ALM-006-03 A	n/a	2700	1100	n/a	90	E	No
Sauna	ALM-006-03 A	n/a	600	1800	n/a	00	E	No
Playroom	ALM-006-03 A	n/a	2100	2400	n/a	45	N	No
Playroom	ALM-006-03 A	n/a	700	2400	n/a	90	N	No
Playroom	ALM-006-03 A	n/a	2700	5400	n/a	60	N	Yes
Playroom	ALM-006-03 A	n/a	2600	3870	n/a	60	E	No
Entry	FIB-005-01 W	n/a	2700	2900	n/a	00	W	No
Entry	FIB-005-01 W	n/a	2700	1199	n/a	90	S	No
Entry	ALM-006-03 A	n/a	2700	600	n/a	00	N	No
Entry	ALM-006-03 A	n/a	2700	400	n/a	00	N	No
Hallway	FIB-005-01 W	n/a	2700	2500	n/a	45	N	No
Hallway	FIB-005-01 W	n/a	2700	3600	n/a	00	N	Yes
Bedroom 3	ALM-006-03 A	n/a	2400	1100	n/a	90	E	No
Office	ALM-006-03 A	n/a	1500	2300	n/a	00	W	No
Office	ALM-006-03 A	n/a	1500	1000	n/a	90	W	No
Pantry	ALM-006-03 A	n/a	1500	900	n/a	90	S	No
Kitchen/Living	FIB-005-01 W	n/a	2000	4800	n/a	00	E	No
Kitchen/Living	FIB-005-01 W	n/a	1200	4800	n/a	00	E	No
Kitchen/Living	FIB-005-01 W	n/a	2400	4200	n/a	65	N	No
Kitchen/Living	FIB-005-01 W	n/a	1200	4200	n/a	00	N	No
Kitchen/Living	FIB-005-01 W	n/a	2400	5200	n/a	80	E	No
Kitchen/Living	FIB-005-01 W	n/a	2400	5100	n/a	80	E	No
Kitchen/Living	FIB-005-01 W	n/a	1200	5200	n/a	00	E	No
Kitchen/Living	FIB-005-01 W	n/a	1200	5100	n/a	00	E	No
Bedroom 4	ALM-006-03 A	n/a	1500	3300	n/a	10	W	No
Ens 4	ALM-006-03 A	n/a	900	1500	n/a	45	S	No
Lounge/Kit.	ALM-006-03 A	n/a	1600	1300	n/a	00	N	Yes
Lounge/Kit.	ALM-006-03 A	n/a	1600	1500	n/a	00	N	Yes
Lounge/Kit.	ALM-006-03 A	n/a	1600	1300	n/a	00	N	Yes
Lounge/Kit.	ALM-006-03 A	n/a	1600	1300	n/a	00	N	Yes
Lounge/Kit.	FIB-005-01 W	n/a	2400	5000	n/a	80	E	No

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-010-02 W	Glass	2.6	0.21	0.20	0.22
VEL-011-01 W	Glass	2.6	0.24	0.23	0.25

Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
Bathroom	VEL-010-02 W	n/a	20	400	1600	E	No	No
Entry	VEL-011-01 W	n/a	0	1200	1100	W	No	No

Skylight type and performance

Skylight ID	Skylight description
No Data Available	

Skylight schedule

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

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Storage	2040	820	90	S
Storage	2040	820	90	S
Entry	2700	1300	90	N
Garage	2040	820	90	S
Garage	2143	4810	90	N
West Entry	2040	820	90	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Tilt up concrete, lined	0.50	Medium	Bulk Insulation R2.5	No
EW-2	Tilt up concrete, lined	0.50	Medium	Bulk Insulation R2	No
EW-3	Tilt up concrete, lined	0.50	Medium	Bulk Insulation R2.5	No
EW-4	Tilt up Concrete	0.50	Medium	No insulation	No
EW-5	Tilt up Concrete	0.50	Medium	No insulation	No
EW-6	Fibro Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No
EW-7	Fibro Cavity Panel Direct Fix	0.50	Medium	Bulk Insulation R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Master Suite	EW-1	2700	5000	E	1700	NO
Master Suite	EW-1	2700	4295	S	0	NO
Master Suite	EW-1	2700	600	N	11200	YES
WIR	EW-1	2700	3590	S	0	YES
Ens	EW-1	2700	2290	E	2300	YES
Bedroom 2	EW-1	2700	3990	E	2300	NO
Ldry	EW-1	2700	1500	E	0	YES
Ldry	EW-1	2700	2395	S	0	NO
Bathroom	EW-1	2700	3800	W	0	NO
Sauna	EW-1	2700	2805	E	2700	YES
Sauna	EW-1	2700	2805	W	0	NO
Sauna	EW-1	2700	1400	N	0	NO
Playroom	EW-1	2700	2510	W	0	NO
Playroom	EW-3	2700	8700	N	200	YES
Playroom	EW-1	2700	4695	E	2300	NO
Storage	EW-1	2700	2195	S	0	NO
Storage	EW-1	2700	9400	W	0	NO
Storage	EW-1	2700	1800	N	0	YES
Storage	EW-1	2700	1495	W	0	YES
Entry	EW-1	2700	2900	W	1600	YES
Entry	EW-1	2700	1300	S	9500	YES
Entry	EW-1	2700	8000	W	300	NO
Entry	EW-1	2700	3095	N	1750	NO
Garage	EW-4	2700	4200	S	0	YES
Garage	EW-4	2700	6300	W	0	NO
Garage	EW-4	2700	6100	N	0	NO

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Garage	EW-5	2700	6295	E	4800	YES
Hallway	EW-1	2700	6395	N	300	YES
Bedroom 3	EW-1	2700	3895	S	0	NO
Bedroom 3	EW-6	2700	1500	E	0	YES
Office	EW-1	2700	4395	S	0	NO
Office	EW-6	2700	4195	W	0	NO
Pantry	EW-6	2700	1690	S	100	YES
Kitchen/Living	EW-3	4000	5000	E	1900	NO
Kitchen/Living	EW-1	3800	6195	S	600	NO
Kitchen/Living	EW-3	3800	5295	N	1767	NO
Kitchen/Living	EW-1	4000	11000	E	2500	YES
Kitchen/Living	EW-1	4000	600	N	12783	YES
Bedroom 4	EW-1	2700	2795	S	0	NO
Bedroom 4	EW-6	2700	4195	W	900	NO
Ens 4	EW-1	2700	1690	S	0	NO
Lounge/Kit.	EW-1	3400	3795	S	0	NO
Lounge/Kit.	EW-6	2700	995	W	0	NO
Lounge/Kit.	EW-1	2700	8300	N	800	NO
Lounge/Kit.	EW-1	2700	5200	E	400	NO
West Entry	EW-7	2700	995	W	0	NO
West Entry	EW-1	4000	200	N	1400	YES
West Entry	EW-7	2700	1395	W	0	YES

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		284.00	No insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		34.00	Bulk Insulation, No Air Gap R2
IW-3 - Tilt Concrete		28.00	Bulk Insulation, No Air Gap R2
IW-4 - Tilt Concrete		19.00	No insulation

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Master Suite	Concrete Slab on Ground 200mm	23.20	None	Bulk Insulation in Contact with Floor R0.5	Bare
WIR	Concrete Slab on Ground 200mm	13.50	None	Bulk Insulation in Contact with Floor R0.5	Bare
Ens	Concrete Slab on Ground 200mm	11.40	None	Bulk Insulation in Contact with Floor R0.5	Ceramic Tiles 8mm
Bedroom 2	Concrete Slab on Ground 200mm	17.60	None	Bulk Insulation in Contact with Floor R0.5	Bare

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ens 2	Concrete Slab on Ground 200mm	4.50	None	Bulk Insulation in Contact with Floor R0.5	Ceramic Tiles 8mm
Ldry	Concrete Slab on Ground 200mm	17.10	None	Bulk Insulation in Contact with Floor R0.5	Bare
Bathroom	Concrete Slab on Ground 200mm	5.70	None	Bulk Insulation in Contact with Floor R0.5	Bare
Sauna	Concrete Slab on Ground 200mm	3.90	None	Bulk Insulation in Contact with Floor R0.5	Ceramic Tiles 8mm
Corridor	Concrete Slab on Ground 200mm	11.30	None	Bulk Insulation in Contact with Floor R0.5	Bare
Playroom	Concrete Slab on Ground 200mm	45.30	None	Bulk Insulation in Contact with Floor R0.5	Bare
Storage	Concrete Slab on Ground 200mm	28.60	None	Bulk Insulation in Contact with Floor R0.5	Bare
Entry/Ens 2	Concrete Above Plasterboard 150mm	0.60		No Insulation	Cork Tiles or Parquetry 8mm
Entry/Corridor	Concrete Above Plasterboard 150mm	10.50		No Insulation	Cork Tiles or Parquetry 8mm
Entry/Playroom	Concrete Above Plasterboard 150mm	16.20		No Insulation	Cork Tiles or Parquetry 8mm
Entry/Storage	Concrete Above Plasterboard 150mm	1.50		No Insulation	Cork Tiles or Parquetry 8mm
Garage	Concrete Slab on Ground 100mm	38.30	None	No Insulation	Bare
Hallway/Ldry	Concrete Above Plasterboard 100mm	3.10		No Insulation	Carpet 10mm
Hallway/Storage	Concrete Above Plasterboard 100mm	6.10		No Insulation	Carpet 10mm
Hallway	Concrete Slab on Ground 100mm	1.90	None	No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Ldry	Concrete Above Plasterboard 150mm	7.70		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 3/Storage	Concrete Above Plasterboard 150mm	4.20		No Insulation	Cork Tiles or Parquetry 8mm
Ens 3/Ldry	Concrete Above Plasterboard 150mm	4.10		No Insulation	Ceramic Tiles 8mm
Ens 3/Storage	Concrete Above Plasterboard 150mm	1.50		No Insulation	Ceramic Tiles 8mm
Office/Storage	Concrete Above Plasterboard 100mm	1.80		No Insulation	Carpet 10mm
Office	Concrete Slab on Ground 100mm	15.20	None	No Insulation	Cork Tiles or Parquetry 8mm
Pantry/WIR	Concrete Above Plasterboard 150mm	5.90		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living/Master Suite	Concrete Above Plasterboard 150mm	23.40		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living/WIR	Concrete Above Plasterboard 150mm	7.40		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living/Ens	Concrete Above Plasterboard 150mm	11.90		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living/Bedroom 2	Concrete Above Plasterboard 150mm	17.90		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living/Ens 2	Concrete Above Plasterboard 150mm	4.30		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living/Corridor	Concrete Above Plasterboard 150mm	0.90		No Insulation	Cork Tiles or Parquetry 8mm
Kitchen/Living/Playroom	Concrete Above Plasterboard 150mm	24.80		No Insulation	Cork Tiles or Parquetry 8mm
Bedroom 4/Office	Timber Above Plasterboard 100mm	11.40		No Insulation	Cork Tiles or Parquetry 8mm

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ens 4/Hallway	Timber Above Plasterboard 100mm	0.50		No Insulation	Ceramic Tiles 8mm
Ens 4/Office	Timber Above Plasterboard 100mm	4.20		No Insulation	Ceramic Tiles 8mm
Lounge/Kit./Hallway	Timber Above Plasterboard 100mm	2.90		No Insulation	Carpet 10mm
Lounge/Kit./Bedroom 3	Timber Above Plasterboard 100mm	11.90		No Insulation	Carpet 10mm
Lounge/Kit./Ens 3	Timber Above Plasterboard 100mm	6.20		No Insulation	Carpet 10mm
Lounge/Kit./Office	Timber Above Plasterboard 100mm	1.10		No Insulation	Carpet 10mm
Lounge/Kit./West Entry	Timber Above Plasterboard 100mm	3.70		No Insulation	Carpet 10mm
West Entry	Concrete Slab on Ground 100mm	6.00	None	No Insulation	Cork Tiles or Parquetry 8mm

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Master Suite	Concrete, Plasterboard	Bulk Insulation R4	No
Master Suite	Concrete Above Plasterboard	No Insulation	No
WIR	Concrete, Plasterboard	Bulk Insulation R4	No
WIR	Concrete Above Plasterboard	No Insulation	No
Ens	Concrete, Plasterboard	Bulk Insulation R4	No
Ens	Concrete Above Plasterboard	No Insulation	No
Bedroom 2	Concrete, Plasterboard	Bulk Insulation R4	No
Bedroom 2	Concrete Above Plasterboard	No Insulation	No
Ens 2	Concrete, Plasterboard	Bulk Insulation R4	No
Ens 2	Concrete Above Plasterboard	No Insulation	No
Ldry	Concrete, Plasterboard	Bulk Insulation R4	No
Ldry	Concrete Above Plasterboard	No Insulation	No
Bathroom	Concrete, Plasterboard	Bulk Insulation R4	No
Sauna	Concrete, Plasterboard	Bulk Insulation R4	No
Corridor	Concrete, Plasterboard	Bulk Insulation R4	No
Corridor	Concrete Above Plasterboard	No Insulation	No
Playroom	Concrete, Plasterboard	Bulk Insulation R4	No
Playroom	Concrete Above Plasterboard	No Insulation	No
Storage	Concrete, Plasterboard	Bulk Insulation R4	No
Storage	Concrete Above Plasterboard	No Insulation	No
Entry	Plasterboard	Bulk Insulation R5	No
Garage	Plasterboard	No insulation	No
Hallway	Plasterboard	Bulk Insulation R5	No
Hallway	Timber Above Plasterboard	No Insulation	No
Bedroom 3	Timber Above Plasterboard	No Insulation	No

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Ens 3	Timber Above Plasterboard	No Insulation	No
Office	Timber Above Plasterboard	No Insulation	No
Pantry	Plasterboard	Bulk Insulation R5	No
Kitchen/Living	Plasterboard	Bulk Insulation R5	No
Bedroom 4	Plasterboard	Bulk Insulation R5	No
Ens 4	Plasterboard	Bulk Insulation R5	No
Lounge/Kit.	Plasterboard	Bulk Insulation R5	No
West Entry	Plasterboard	Bulk Insulation R5	No
West Entry	Timber Above Plasterboard	No Insulation	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm ²)	Sealed/unsealed
Master Suite	5	Downlights - LED	150	Sealed
WIR	4	Downlights - LED	150	Sealed
Ens	3	Downlights - LED	150	Sealed
Ens	1	Exhaust Fans	300	Sealed
Bedroom 2	4	Downlights - LED	150	Sealed
Ens 2	1	Downlights - LED	150	Sealed
Ens 2	1	Exhaust Fans	300	Sealed
Ldry	2	Downlights - LED	150	Sealed
Ldry	1	Exhaust Fans	300	Sealed
Bathroom	2	Downlights - LED	150	Sealed
Sauna	2	Downlights - LED	150	Sealed
Sauna	1	Exhaust Fans	300	Sealed
Corridor	3	Downlights - LED	150	Sealed
Playroom	8	Downlights - LED	150	Sealed
Storage	4	Downlights - LED	150	Sealed
Entry	6	Downlights - LED	150	Sealed
Hallway	3	Downlights - LED	150	Sealed
Bedroom 3	4	Downlights - LED	150	Sealed
Ens 3	2	Downlights - LED	150	Sealed
Ens 3	1	Exhaust Fans	300	Sealed
Office	4	Downlights - LED	150	Sealed
Pantry	2	Downlights - LED	150	Sealed
Pantry	1	Exhaust Fans	300	Sealed
Kitchen/Living	21	Downlights - LED	150	Sealed
Kitchen/Living	2	Exhaust Fans	300	Sealed
Bedroom 4	4	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ens 4	2	Downlights - LED	150	Sealed
Ens 4	1	Exhaust Fans	300	Sealed
Lounge/Kit.	8	Downlights - LED	150	Sealed
West Entry	2	Downlights - LED	150	Sealed

Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Waterproofing Membrane	No Added Insulation, No air Gap	0.50	Medium
Waterproofing Membrane	No Added Insulation, No air Gap	0.50	Medium
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1.5	0.58	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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, 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.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

BASIX[®]Certificate

Building Sustainability Index www.basix.nsw.gov.au

Single Dwelling

Certificate number: 1089927S_02

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 06/10/2017 published by the Department. This document is available at www.basix.nsw.gov.au

This certificate is a revision of certificate number 1089927S lodged with the consent authority or certifier on 04 May 2020 with application DA2020/0430.

It is the responsibility of the applicant to verify with the consent authority that the original, or any revised certificate, complies with the requirements of Schedule 1 Clause 2A, 4A or 6A of the Environmental Planning and Assessment Regulation 2000

Secretary

Date of issue: Thursday, 16 July 2020

To be valid, this certificate must be lodged within 3 months of the date of issue.



Planning,
Industry &
Environment

Project summary

Project name	50 Minkara Road_02
Street address	50 Minkara Road Bayview 2104
Local Government Area	Northern Beaches Council
Plan type and plan number	deposited 28908
Lot no.	9
Section no.	1
Project type	separate dwelling house
No. of bedrooms	4

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 54	Target 50

Certificate Prepared by

Name / Company Name: Efficient Living Pty Ltd

ABN (if applicable): 82116346082

Description of project

Project address

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Site details

Site area (m ²)	4420
Roof area (m ²)	272
Conditioned floor area (m2)	333.0
Unconditioned floor area (m2)	61.0
Total area of garden and lawn (m2)	100

Assessor details and thermal loads

Assessor number	HERA10033
Certificate number	0004717187-02
Climate zone	56
Area adjusted cooling load (MJ/m ² .year)	25
Area adjusted heating load (MJ/m ² .year)	38

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 54	Target 50

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.



















Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Fixtures			
The applicant must install showerheads with a minimum rating of 3 star (> 7.5 but <= 9 L/min) in all showers in the development.		✓	✓
The applicant must install a toilet flushing system with a minimum rating of 3 star in each toilet in the development.		✓	✓
The applicant must install taps with a minimum rating of 3 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 3 star in each bathroom in the development.		✓	
Alternative water			
Rainwater tank			
The applicant must install a rainwater tank of at least 3000 litres on the site. This rainwater tank must meet, and be installed in accordance with, the requirements of all applicable regulatory authorities.	✓	✓	✓
The applicant must configure the rainwater tank to collect rain runoff from at least 250 square metres of the roof area of the development (excluding the area of the roof which drains to any stormwater tank or private dam).		✓	✓
The applicant must connect the rainwater tank to: <ul style="list-style-type: none"> all toilets in the development the cold water tap that supplies each clothes washer in the development at least one outdoor tap in the development (Note: NSW Health does not recommend that rainwater be used for human consumption in areas with potable water supply.) 		✓ ✓ ✓	✓ ✓ ✓
Swimming pool			
The swimming pool must not have a volume greater than 58 kilolitres.	✓	✓	
The swimming pool must have a pool cover.		✓	

Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
The swimming pool must be outdoors.	✓	✓	
Outdoor Spa			
The spa must not have a volume greater than 1.75 kilolitres.	✓	✓	
The spa must have a spa cover.		✓	

Thermal Comfort Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Simulation Method			
The applicant must attach the certificate referred to under "Assessor Details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for an occupation certificate for the proposed development.			
The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX certificate, including the Cooling and Heating loads shown on the front page of this certificate.			
The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Assessor Certificate requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor to certify that this is the case. The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.	✓	✓	✓
The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
The applicant must construct the floors and walls of the dwelling in accordance with the specifications listed in the table below.	✓	✓	✓


Floor and wall construction	Area
floor - concrete slab on ground	All or part of floor area square metres


Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Hot water			
The applicant must install the following hot water system in the development, or a system with a higher energy rating: electric instantaneous.	✓	✓	✓
Cooling system			
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: 1-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: 1-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
Heating system			
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: gas fixed flued heater; Energy rating: 3 Star		✓	✓
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: 1-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
Ventilation			
The applicant must install the following exhaust systems in the development:			
At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: interlocked to light		✓	✓
Kitchen: individual fan, ducted to façade or roof; Operation control: manual switch on/off		✓	✓
Laundry: individual fan, ducted to façade or roof; Operation control: interlocked to light		✓	✓
Artificial lighting			
The applicant must ensure that the "primary type of artificial lighting" is fluorescent or light emitting diode (LED) lighting in each of the following rooms, and where the word "dedicated" appears, the fittings for those lights must only be capable of accepting fluorescent or light emitting diode (LED) lamps:			
• at least 4 of the bedrooms / study;		✓	✓
• at least 44 of the living / dining rooms;		✓	✓
• the kitchen;		✓	✓


Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<ul style="list-style-type: none"> all bathrooms/toilets; the laundry; all hallways; 		  	  
Natural lighting			
The applicant must install a window and/or skylight in the kitchen of the dwelling for natural lighting.			
Swimming pool			
The applicant must install the following heating system for the swimming pool in the development (or alternatively must not install any heating system for the swimming pool): electric heat pump			
The applicant must install a timer for the swimming pool pump in the development.			
Outdoor spa			
The applicant must install the following heating system for the spa in the development (or alternatively must not install any heating system for the spa): electric heat pump			
The applicant must install a timer for the spa pump in the development.			
Alternative energy			
The applicant must install a photovoltaic system with the capacity to generate at least 5 peak kilowatts of electricity as part of the development. The applicant must connect this system to the development's electrical system.			
Other			
The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling.			
The applicant must install a fixed outdoor clothes drying line as part of the development.			

Legend

In these commitments, "applicant" means the person carrying out the development.

Commitments identified with a  in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).

Commitments identified with a  in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.

Commitments identified with a  in the "Certifier check" column must be certified by a certifying authority as having been fulfilled, before a final occupation certificate (either interim or final) for the development may be issued.