efficient LIVING

# NatHERS and BASIX Assessment

## Legend Design Studio
## Proposed Residential Development

To be built at **1 Tabalum Road, Balgowlah Heights NSW 2093**

| Issue | File Ref | Description | Author | Date |
|---|---|---|---|---|
| A | 19-0660 | NatHERS and BASIX Assessment | FM | 05/09/2019 |
| B | 21-2037 | NatHERS and BASIX Update | MP | 07/07/2021 |
| C | 22-2952R | NatHERS & Basix Update | MF | 28/03/2022 |

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Legend Design Studio. 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.

**Sustainable Building Consultants**
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28 March 2022

**Legend Design**
**1 Tabalum Road, Balgowlah Heights**


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License Holder: Tracey Cools
Accreditation Number: HERA10033


## BASIX Details:

NatHERS Certificate Number: 0006220248-01

BASIX adjusted conditioned area: 312.0 $m^2$

BASIX adjusted un-conditioned area: 49.0 $m^2$

Area adjusted heating load: 32.0 MJ/ $m^2$/pa

Area adjusted cooling load: 17.2 MJ/ $m^2$/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.

## Glazing Doors/Windows

Aluminium frame double performance glazing:

U-value: 2.90 (equal to or lower than) SHGC: 0.51 (±10%)

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

## Skylights

None

## Roof

Concrete with R1.0 external insulation

## External Colour

Light (SA<0.475)

## Ceiling

Plasterboard ceiling with R4.5 insulation (insulation only value) to soffit of concrete where roof is over

Plasterboard ceiling with R2.5 insulation (insulation only value) to soffit of concrete where balcony is over

Plasterboard ceiling with an R2.5 to garage ceiling where habitable rooms above

## Ceiling Penetrations

1 sealed LED light per 4$m^2$ of ceiling area

## External Wall

Concrete walls with R2.5 insulation (insulation only value) plasterboard lined

**External Colour**

Light (SA<0.475)

**Walls within dwellings**

Concrete

**Floors**

Concrete slab on ground with a minimum R2.5 insulation (insulation only value)

Suspended concrete with a minimum R3.0 insulation (insulation only value)

Concrete between levels, no insulation required

**Floor coverings**

Timber to bedrooms and tiles elsewhere

**External Shading**

Shading as per plans

**Ventilation**

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

**Alternative water**

Tank size: 5,000L

Collecting from 200m2 roof area

Connected to outdoor tap for irrigation of landscaping

**Alternative Energy**

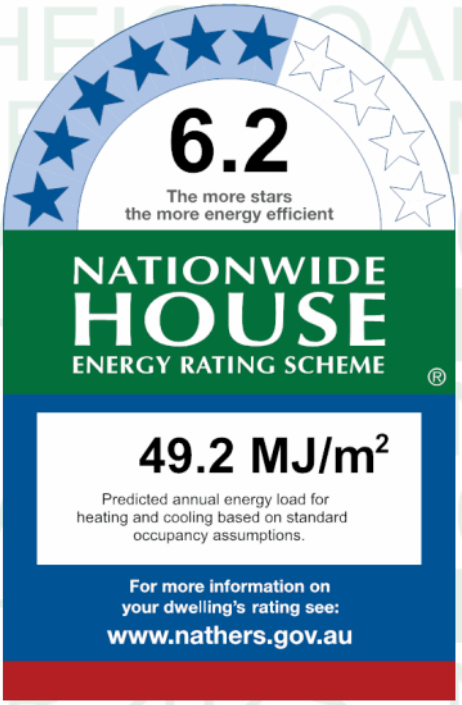
Solar Photovoltaic system minimum of 5.0 peak KW

**Hot water system**

5 star gas instantaneous

# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0006220248-01

**Generated on 28 Mar 2022 using BERS Pro v4.4.1.5 (3.21)**




## Property

| | |
|---|---|
| **Address** | 1 Tabalum Road , Balgowlah Heights , NSW , 2093 |
| **Lot/DP** | 20/758044 |
| **NCC Class*** | 1A |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 22-2952R |
| **Prepared by** | Legend Design |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 312.0 | Exposed |
| Unconditioned* | 222.0 | **NatHERS climate zone** |
| Total | 534.0 | 56 |
| Garage | 173.0 | |

## Thermal performance

| Heating | Cooling |
|---|---|
| **32.0** MJ/$m^2$ | **17.2** MJ/$m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Tracey Cools |
| **Business name** | Efficient Living Pty Ltd |
| **Email** | admin@efficientliving.com.au |
| **Phone** | 02 9970 6181 |
| **Accreditation No.** | HERA10033 |
| **Assessor Accrediting Organisation** | HERA |
| **Declaration of interest** | None |

### 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=QyaqtWbvz.
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.

* Refer to glossary.

# 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? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### 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

I have modeled the shading in accordance with NatHERS principles

# 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 |
| ATB-006-03 B | ATB-006-03 B Al Thermally Broken B DG Argon Fill High Solar Gain low-E - Clear | 2.9 | 0.51 | 0.48 | 0.54 |

### 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* |
|---|---|---|---|---|---|---|---|---|
| Guest Bedroom | ATB-006-03 B | n/a | 2700 | 1800 | n/a | 00 | S | No |

* Refer to glossary.

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Guest Bedroom | ATB-006-03 B | n/a | 2700 | 2400 | n/a | 45 | W | No |
| Guest Bedroom | ATB-006-03 B | n/a | 2700 | 800 | n/a | 00 | W | No |
| Rumpus | ATB-006-03 B | n/a | 2700 | 6600 | n/a | 67 | W | No |
| Bedroom 2 | ATB-006-03 B | n/a | 1200 | 2400 | n/a | 45 | N | No |
| Bedroom 2 | ATB-006-03 B | n/a | 1950 | 2300 | n/a | 22 | S | No |
| Bedroom 2 | ATB-006-03 B | n/a | 2700 | 3200 | n/a | 45 | W | No |
| Bedroom 2 | ATB-006-03 B | n/a | 1950 | 800 | n/a | 00 | W | No |
| Ens 2 | ATB-006-03 B | n/a | 500 | 2080 | n/a | 45 | N | No |
| Ens 2 | ATB-006-03 B | n/a | 1500 | 400 | n/a | 00 | E | No |
| Stairs level 2 | ATB-006-03 B | n/a | 2500 | 4050 | n/a | 00 | N | No |
| Hall Void | ATB-006-03 B | n/a | 2700 | 2940 | n/a | 00 | W | No |
| Hall Void | ATB-006-03 B | n/a | 2700 | 900 | n/a | 90 | W | No |
| Bedroom 1 | ATB-006-03 B | n/a | 2700 | 800 | n/a | 00 | N | No |
| Bedroom 1 | ATB-006-03 B | n/a | 2700 | 800 | n/a | 00 | S | No |
| Bedroom 1 | ATB-006-03 B | n/a | 2100 | 1250 | n/a | 45 | S | No |
| Bedroom 1 | ATB-006-03 B | n/a | 2700 | 800 | n/a | 00 | W | No |
| Bedroom 1 | ATB-006-03 B | n/a | 2700 | 2900 | n/a | 45 | W | No |
| Bedroom 1 | ATB-006-03 B | n/a | 2700 | 800 | n/a | 00 | W | No |
| Ens 1 | ATB-006-03 B | n/a | 2100 | 2100 | n/a | 15 | S | No |
| Bedroom 3 | ATB-006-03 B | n/a | 2100 | 930 | n/a | 00 | W | No |
| Bedroom 3 | ATB-006-03 B | n/a | 900 | 2400 | n/a | 22 | E | No |
| Bedroom 3 | ATB-006-03 B | n/a | 2100 | 2400 | n/a | 22 | S | No |
| Laundry | ATB-006-03 B | n/a | 900 | 1500 | n/a | 45 | E | No |
| Bath | ATB-006-03 B | n/a | 1000 | 1730 | n/a | 45 | E | No |
| Bedroom 4 | ATB-006-03 B | n/a | 1200 | 2500 | n/a | 45 | N | No |
| Bedroom 4 | ATB-006-03 B | n/a | 1200 | 2400 | n/a | 22 | E | No |
| Family | ATB-006-03 B | n/a | 2200 | 900 | n/a | 45 | N | No |
| Family | ATB-006-03 B | n/a | 2200 | 900 | n/a | 45 | N | No |
| Family | ATB-006-03 B | n/a | 900 | 2500 | n/a | 45 | N | No |
| Family | ATB-006-03 B | n/a | 2700 | 3800 | n/a | 60 | W | No |
| Kitchen/Living | ATB-006-03 B | n/a | 2700 | 675 | n/a | 00 | E | No |
| Kitchen/Living | ATB-006-03 B | n/a | 2700 | 675 | n/a | 00 | E | No |
| Kitchen/Living | ATB-006-03 B | n/a | 700 | 4000 | n/a | 00 | E | No |
| Kitchen/Living | ATB-006-03 B | n/a | 2700 | 6965 | n/a | 67 | S | No |
| Kitchen/Living | ATB-006-03 B | n/a | 1800 | 2250 | n/a | 45 | S | No |
| Kitchen/Living | ATB-006-03 B | n/a | 2700 | 8050 | n/a | 67 | W | No |
| Kitchen/Living | ATB-006-03 B | n/a | 2700 | 3030 | n/a | 00 | W | Yes |
| Kitchen/Living | ATB-006-03 B | n/a | 600 | 8770 | n/a | 00 | S | No Shading |
| Kitchen/Living | ATB-006-03 B | n/a | 600 | 950 | n/a | 00 | W | No Shading |

* Refer to glossary.

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | ATB-006-03 B | n/a | 600 | 4550 | n/a | 00 | N | No Shading |
| Stairs level 3 | ATB-006-03 B | n/a | 2700 | 4050 | n/a | 00 | N | No |
| Stairs level 3 | ATB-006-03 B | n/a | 600 | 3800 | n/a | 00 | E | No Shading |
| Stairs level 3 | ATB-006-03 B | n/a | 600 | 4050 | n/a | 00 | N | No Shading |
| Stairs level 3 | ATB-006-03 B | n/a | 600 | 3800 | n/a | 00 | W | No Shading |
| Office | ATB-006-03 B | n/a | 1700 | 2500 | n/a | 45 | N | No |
| Office | ATB-006-03 B | n/a | 1700 | 1250 | n/a | 45 | E | No |
| PR | ATB-006-03 B | n/a | 1400 | 900 | n/a | 45 | E | No |
| BP | ATB-006-03 B | n/a | 1400 | 900 | n/a | 45 | 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 |
| No Data Available | | | | | |

## **Roof window** *schedule*

| Location | Window ID | Window no. | Opening % | Height (mm) | Width (mm) | Orientation | Outdoor shade | Indoor shade |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## **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 |
|---|---|---|---|---|

* Refer to glossary.

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Garage 1 | 2400 | 6000 | 90 | SW |
| Rumpus | 2040 | 820 | 90 | S |
| Kitchen/Living | 2700 | 1200 | 90 | E |
| Cellar/storage | 2040 | 820 | 90 | S |

## 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 | 0.30 | Light | No insulation | No |
| EW-2 | Tilt up concrete, lined | 0.30 | Light | No insulation | No |
| EW-3 | Tilt up concrete, lined | 0.30 | Light | Bulk Insulation R2.5 | No |
| EW-4 | Tilt up concrete, lined | 0.30 | Light | 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) |
|---|---|---|---|---|---|---|
| Garage 1 | EW-1 | 2950 | 6702 | NW | 0 | NO |
| Garage 1 | EW-2 | 2950 | 1980 | E | 0 | NO |
| Garage 1 | EW-1 | 2950 | 4089 | SE | 0 | NO |
| Garage 1 | EW-1 | 2950 | 1709 | S | 0 | NO |
| Garage 1 | EW-1 | 2950 | 6224 | SW | 0 | NO |
| Plant room | EW-2 | 2950 | 5340 | N | 0 | NO |
| Plant room | EW-1 | 2950 | 700 | E | 0 | YES |
| Pool Equip St | EW-1 | 2950 | 6926 | NW | 0 | NO |
| Pool Equip St | EW-1 | 2950 | 3740 | N | 0 | NO |
| Stairs Garage L | EW-1 | 2950 | 2740 | E | 0 | NO |
| Stairs Garage L | EW-1 | 2950 | 4140 | N | 0 | YES |
| Guest Bedroom | EW-3 | 2700 | 2850 | N | 1625 | NO |
| Guest Bedroom | EW-3 | 2700 | 1290 | N | 1575 | NO |
| Guest Bedroom | EW-4 | 2700 | 1900 | S | 13300 | YES |
| Guest Bedroom | EW-4 | 2700 | 3500 | W | 2800 | NO |
| Bath Level 1 | EW-4 | 2700 | 2240 | N | 1425 | NO |
| Bath Level 1 | EW-4 | 2700 | 700 | E | 5000 | YES |
| Rumpus | EW-4 | 2700 | 1280 | E | 800 | NO |
| Rumpus | EW-4 | 2700 | 1440 | S | 5300 | NO |
| Rumpus | EW-4 | 2700 | 3700 | S | 6350 | NO |
| Rumpus | EW-4 | 2700 | 6640 | W | 5050 | YES |
| Stairs level 1 | EW-4 | 2700 | 2740 | E | 800 | NO |
| Stairs level 1 | EW-4 | 2700 | 4140 | N | 1800 | YES |

* Refer to glossary.

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 2 | EW-4 | 2700 | 3740 | N | 400 | NO |
| Bedroom 2 | EW-4 | 2700 | 2500 | S | 12125 | YES |
| Bedroom 2 | EW-4 | 2700 | 4800 | W | 800 | NO |
| Ens 2 | EW-4 | 2700 | 2140 | N | 400 | NO |
| Ens 2 | EW-4 | 2700 | 700 | E | 8100 | YES |
| Stairs level 2 | EW-4 | 2700 | 4080 | N | 500 | YES |
| Hall Void | EW-4 | 2700 | 4080 | W | 3300 | YES |
| Bedroom 1 | EW-4 | 2700 | 2500 | N | 9400 | YES |
| Bedroom 1 | EW-4 | 2700 | 6440 | S | 3025 | NO |
| Bedroom 1 | EW-4 | 2700 | 4800 | W | 1375 | NO |
| Ens 1 | EW-4 | 2700 | 2180 | S | 2900 | YES |
| Bedroom 3 | EW-4 | 2700 | 1000 | W | 10725 | YES |
| Bedroom 3 | EW-4 | 2700 | 4340 | E | 400 | NO |
| Bedroom 3 | EW-4 | 2700 | 4300 | S | 1900 | NO |
| Laundry | EW-4 | 2700 | 1200 | N | 8450 | YES |
| Laundry | EW-4 | 2700 | 2340 | E | 400 | NO |
| Bath | EW-4 | 2700 | 2980 | E | 1600 | YES |
| Bedroom 4 | EW-4 | 2700 | 2756 | N | 467 | YES |
| Bedroom 4 | EW-4 | 2700 | 500 | N | 500 | NO |
| Bedroom 4 | EW-4 | 2700 | 361 | NE | 451 | NO |
| Bedroom 4 | EW-4 | 2700 | 4700 | E | 500 | NO |
| Bedroom 4 | EW-4 | 2700 | 1700 | S | 11800 | YES |
| Family | EW-4 | 2700 | 4500 | N | 1000 | NO |
| Family | EW-4 | 2700 | 700 | E | 8600 | YES |
| Family | EW-4 | 2700 | 2440 | S | 12775 | YES |
| Family | EW-4 | 2700 | 4200 | W | 2300 | NO |
| Kitchen/Living | EW-4 | 2700 | 2980 | E | 2600 | YES |
| Kitchen/Living | EW-4 | 2700 | 6240 | E | 700 | NO |
| Kitchen/Living | EW-4 | 2700 | 10700 | S | 600 | NO |
| Kitchen/Living | EW-4 | 2700 | 8158 | W | 4643 | YES |
| Kitchen/Living | EW-4 | 2700 | 3940 | W | 4800 | YES |
| Stairs level 3 | EW-4 | 2700 | 4080 | N | 1450 | YES |
| Office | EW-4 | 2700 | 2756 | N | 1020 | YES |
| Office | EW-4 | 2700 | 500 | N | 1075 | NO |
| Office | EW-4 | 2700 | 283 | NE | 1025 | NO |
| Office | EW-4 | 2700 | 2840 | E | 1000 | NO |
| PR | EW-4 | 2700 | 1840 | E | 1000 | NO |
| PR | EW-4 | 2700 | 500 | S | 11900 | YES |
| BP | EW-4 | 2700 | 1780 | E | 700 | NO |

* Refer to glossary.

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Storage | EW-2 | 2950 | 11112 | SE | 0 | NO |
| Cellar/storage | EW-3 | 2700 | 5240 | E | 750 | NO |
| Cellar/storage | EW-3 | 2700 | 3540 | S | 2975 | NO |

## Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Tilt Concrete | | 456.00 | No insulation |

## Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Lift garage Lev | Concrete Slab on Ground 200mm | 2.50 | None | No Insulation | Ceramic Tiles 8mm |
| Lift Level 1/Lift garage Lev | Concrete Above Plasterboard 200mm | 2.50 | | No Insulation | Ceramic Tiles 8mm |
| Lift Level 2/Lift Level 1 | Concrete Above Plasterboard 200mm | 2.50 | | No Insulation | Ceramic Tiles 8mm |
| Lift Level 3/Lift Level 2 | Concrete Above Plasterboard 200mm | 2.50 | | No Insulation | Ceramic Tiles 8mm |
| Garage 1 | Concrete Slab on Ground 200mm | 87.70 | None | No Insulation | Bare |
| Plant room | Concrete Slab on Ground 200mm | 17.90 | None | No Insulation | Bare |
| Pool Equip St | Concrete Slab on Ground 200mm | 35.10 | None | No Insulation | Bare |
| Stairs Garage L | Concrete Slab on Ground 200mm | 8.30 | None | No Insulation | Ceramic Tiles 8mm |
| Guest Bedroom/Plant room | Concrete Above Plasterboard 200mm | 10.30 | | Bulk Insulation R2.5 | Cork Tiles or Parquetry 8mm |
| Guest Bedroom/Pool Equip St | Concrete Above Plasterboard 200mm | 3.80 | | Bulk Insulation R2.5 | Cork Tiles or Parquetry 8mm |
| Bath Level 1/Plant room | Concrete Above Plasterboard 200mm | 7.60 | | Bulk Insulation R2.5 | Ceramic Tiles 8mm |
| Rumpus/Garage 1 | Concrete Above Plasterboard 200mm | 17.80 | | Bulk Insulation R2.5 | Ceramic Tiles 8mm |
| Rumpus/Storage | Concrete Above Plasterboard 200mm | 19.90 | | Bulk Insulation R2.5 | Ceramic Tiles 8mm |
| Rumpus | Concrete Slab on Ground 200mm | 1.10 | None | No Insulation | Ceramic Tiles 8mm |
| Stairs level 1/Stairs Garage L | Concrete Above Plasterboard 200mm | 8.30 | | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2/Guest Bedroom | Concrete Above Plasterboard 150mm | 12.60 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Bedroom 2/Bath Level 1 | Concrete Above Plasterboard 150mm | 2.70 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Bedroom 2/Rumpus | Concrete Above Plasterboard 150mm | 5.80 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Bedroom 2 | Suspended Concrete Slab 150mm | 1.80 | Totally Open | Bulk Insulation in Contact with Floor R3 | Cork Tiles or Parquetry 8mm |
| Ens 2/Bath Level 1 | Concrete Above Plasterboard 200mm | 4.90 | | No Insulation | Ceramic Tiles 8mm |
| Stairs level 2/Stairs level 1 | Concrete Above Plasterboard 200mm | 8.10 | | No Insulation | Ceramic Tiles 8mm |

* Refer to glossary.

| Location | Construction | Area (m ) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Hall Void/Rumpus | Concrete Above Plasterboard 200mm | 22.10 | | No Insulation | Ceramic Tiles 8mm |
| Hall Void/Cellar/storage | Concrete Above Plasterboard 200mm | 12.80 | | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1/Rumpus | Concrete Above Plasterboard 150mm | 6.00 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Bedroom 1 | Suspended Concrete Slab 150mm | 24.70 | Totally Open | Bulk Insulation in Contact with Floor R3 | Cork Tiles or Parquetry 8mm |
| Ens 1/Cellar/storage | Concrete Above Plasterboard 150mm | 0.80 | | No Insulation | Ceramic Tiles 8mm |
| Ens 1 | Suspended Concrete Slab 150mm | 7.70 | Totally Open | Bulk Insulation in Contact with Floor R3 | Cork Tiles or Parquetry 8mm |
| Bedroom 3 | Concrete Slab on Ground 200mm | 18.50 | None | Bulk Insulation in Contact with Floor R2.5 | Cork Tiles or Parquetry 8mm |
| Laundry | Concrete Slab on Ground 200mm | 6.60 | None | Bulk Insulation in Contact with Floor R2.5 | Ceramic Tiles 8mm |
| Bath/Cellar/storage | Concrete Above Plasterboard 200mm | 4.10 | | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab on Ground 200mm | 5.00 | None | Bulk Insulation in Contact with Floor R2.5 | Ceramic Tiles 8mm |
| Bedroom 4 | Concrete Slab on Ground 200mm | 15.50 | None | Bulk Insulation in Contact with Floor R2.5 | Cork Tiles or Parquetry 8mm |
| Family/Bedroom 2 | Concrete Above Plasterboard 200mm | 12.80 | | No Insulation | Ceramic Tiles 8mm |
| Family/Ens 2 | Concrete Above Plasterboard 200mm | 5.20 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living /Bedroom 2 | Concrete Above Plasterboard 200mm | 1.80 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living /Hall Void | Concrete Above Plasterboard 200mm | 30.20 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living /Bedroom 1 | Concrete Above Plasterboard 200mm | 14.80 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living /Ens 1 | Concrete Above Plasterboard 200mm | 9.10 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living /Bedroom 3 | Concrete Above Plasterboard 200mm | 18.70 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living /Laundry | Concrete Above Plasterboard 200mm | 1.90 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living /Bath | Concrete Above Plasterboard 200mm | 9.50 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living /Bedroom 4 | Concrete Above Plasterboard 200mm | 2.10 | | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Suspended Concrete Slab 200mm | 24.50 | Totally Open | Bulk Insulation in Contact with Floor R3 | Ceramic Tiles 8mm |
| Stairs level 3/Stairs level 2 | Concrete Above Plasterboard 150mm | 8.10 | | No Insulation | Ceramic Tiles 8mm |
| Office/Bedroom 4 | Concrete Above Plasterboard 200mm | 9.70 | | No Insulation | Ceramic Tiles 8mm |
| PR/Bedroom 4 | Concrete Above Plasterboard 200mm | 3.30 | | No Insulation | Ceramic Tiles 8mm |
| BP/Laundry | Concrete Above Plasterboard 200mm | 5.10 | | No Insulation | Ceramic Tiles 8mm |
| Storage | Concrete Slab on Ground 200mm | 32.70 | None | No Insulation | Bare |
| Cellar/storage/Garage 1 | Concrete Above Plasterboard 200mm | 2.40 | | Bulk Insulation R2.5 | Ceramic Tiles 8mm |
| Cellar/storage/Storage | Concrete Above Plasterboard 200mm | 5.70 | | Bulk Insulation R2.5 | Ceramic Tiles 8mm |
| Cellar/storage | Concrete Slab on Ground 200mm | 10.40 | None | No Insulation | Ceramic Tiles 8mm |

# Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Lift garage Lev | Concrete Above Plasterboard | No Insulation | No |
| Lift Level 1 | Concrete Above Plasterboard | No Insulation | No |
| Lift Level 2 | Concrete Above Plasterboard | No Insulation | No |
| Lift Level 3 | Concrete, Plasterboard | Bulk Insulation R4.5 | No |
| Garage 1 | Concrete, Plasterboard | No insulation | No |
| Garage 1 | Concrete Above Plasterboard | Bulk Insulation R2.5 | No |
| Plant room | Concrete Above Plasterboard | Bulk Insulation R2.5 | No |
| Pool Equip St | Concrete, Plasterboard | No insulation | No |
| Pool Equip St | Concrete Above Plasterboard | Bulk Insulation R2.5 | No |
| Stairs Garage L | Concrete Above Plasterboard | No Insulation | No |
| Guest Bedroom | Plasterboard | Bulk Insulation R2.5 | No |
| Guest Bedroom | Concrete Above Plasterboard | No Insulation | No |
| Bath Level 1 | Concrete Above Plasterboard | No Insulation | No |
| Rumpus | Plasterboard | Bulk Insulation R2.5 | No |
| Rumpus | Concrete Above Plasterboard | No Insulation | No |
| Stairs level 1 | Concrete Above Plasterboard | No Insulation | No |
| Bedroom 2 | Plasterboard | Bulk Insulation R2.5 | No |
| Bedroom 2 | Concrete Above Plasterboard | No Insulation | No |
| Ens 2 | Concrete Above Plasterboard | No Insulation | No |
| Stairs level 2 | Concrete Above Plasterboard | No Insulation | No |
| Hall Void | Plasterboard | Bulk Insulation R2.5 | No |
| Hall Void | Concrete Above Plasterboard | No Insulation | No |
| Bedroom 1 | Plasterboard | Bulk Insulation R2.5 | No |
| Bedroom 1 | Concrete Above Plasterboard | No Insulation | No |
| Ens 1 | Concrete Above Plasterboard | No Insulation | No |
| Bedroom 3 | Concrete Above Plasterboard | No Insulation | No |
| Laundry | Concrete Above Plasterboard | No Insulation | No |
| Bath | Concrete Above Plasterboard | No Insulation | No |
| Bedroom 4 | Concrete Above Plasterboard | No Insulation | No |
| Family | Concrete, Plasterboard | Bulk Insulation R4.5 | No |
| Kitchen/Living | Concrete, Plasterboard | Bulk Insulation R4.5 | No |
| Stairs level 3 | Concrete, Plasterboard | Bulk Insulation R4.5 | No |
| Office | Concrete, Plasterboard | Bulk Insulation R4.5 | No |
| PR | Concrete, Plasterboard | Bulk Insulation R4.5 | No |
| BP | Concrete, Plasterboard | Bulk Insulation R4.5 | No |
| Storage | Concrete, Plasterboard | No insulation | No |
| Storage | Concrete Above Plasterboard | Bulk Insulation R2.5 | No |

* Refer to glossary.

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Cellar/storage | Concrete Above Plasterboard | No Insulation | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Guest Bedroom | 3 | Downlights - LED | 150 | Sealed |
| Bath Level 1 | 2 | Downlights - LED | 150 | Sealed |
| Bath Level 1 | 1 | Exhaust Fans | 300 | Sealed |
| Rumpus | 9 | Downlights - LED | 150 | Sealed |
| Stairs level 1 | 1 | Downlights - LED | 150 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |
| Ens 2 | 1 | Downlights - LED | 150 | Sealed |
| Ens 2 | 1 | Exhaust Fans | 300 | Sealed |
| Stairs level 2 | 2 | Downlights - LED | 150 | Sealed |
| Hall Void | 8 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 6 | Downlights - LED | 150 | Sealed |
| Ens 1 | 2 | Downlights - LED | 150 | Sealed |
| Ens 1 | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 3 | 4 | Downlights - LED | 150 | Sealed |
| Laundry | 1 | Downlights - LED | 150 | Sealed |
| Laundry | 1 | Exhaust Fans | 300 | Sealed |
| Bath | 2 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 4 | 3 | Downlights - LED | 150 | Sealed |
| Family | 4 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 28 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Stairs level 3 | 2 | Downlights - LED | 150 | Sealed |
| Office | 2 | Downlights - LED | 150 | Sealed |
| PR | 1 | Downlights - LED | 150 | Sealed |
| PR | 1 | Exhaust Fans | 300 | Sealed |
| BP | 1 | 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 | Bulk Insulation, No Air Gap Above R1 | 0.30 | Light |
| Waterproofing Membrane | No Insulation, Only an Air Gap | 0.30 | Light |
| Concrete | No Insulation, Only an Air Gap | 0.30 | Light |

# 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 10 m e.g. city and industrial areas. |
| **Horizontal shading feature** | provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. |
| **National Construction Code** (NCC) Class | the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au. |
| **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: 1040129S_06

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 10/09/2020 published by the Department. This document is available at www.basix.nsw.gov.au

This certificate is a revision of certificate number 1040129S_04 lodged with the consent authority or certifier on 20 February 2020 with application 2020/0077.

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: Monday, 28 March 2022
To be valid, this certificate must be lodged within 3 months of the date of issue.

NSW GOVERNMENT | Planning, Industry & Environment

| Project summary | | |
|---|---|---|
| Project name | 1 Tabalum Road, Balgowlah Heights_06 | |
| Street address | 1 Tabalum Road Balgowlah Heights 2093 | |
| Local Government Area | Northern Beaches Council | |
| Plan type and plan number | deposited 758044 | |
| Lot no. | 20 | |
| Section no. | 20 | |
| Project type | separate dwelling house | |
| No. of bedrooms | 5 | |
| **Project score** | | |
| Water | ✔ 42 | Target 40 |
| Thermal Comfort | ✔ Pass | Target Pass |
| Energy | ✔ 65 | Target 50 |

| Certificate Prepared by |
|---|
| Name / Company Name: Efficient Living Pty Ltd |
| ABN (if applicable): 82116346082 |

# Description of project

| Project address | |
|---|---|
| Project name | 1 Tabalum Road, Balgowlah Heights_06 |
| Street address | 1 Tabalum Road Balgowlah Heights 2093 |
| Local Government Area | Northern Beaches Council |
| Plan type and plan number | Deposited Plan 758044 |
| Lot no. | 20 |
| Section no. | 20 |
| **Project type** | |
| Project type | separate dwelling house |
| No. of bedrooms | 5 |
| **Site details** | |
| Site area (m²) | 7538 |
| Roof area (m²) | 275 |
| Conditioned floor area (m2) | 312.0 |
| Unconditioned floor area (m2) | 49.0 |
| Total area of garden and lawn (m2) | 339 |

| Assessor details and thermal loads | | |
|---|---|---|
| Assessor number | HERA10033 | |
| Certificate number | 0006220248-01 | |
| Climate zone | 56 | |
| Area adjusted cooling load (MJ/m².year) | 17 | |
| Area adjusted heating load (MJ/m².year) | 32 | |
| Ceiling fan in at least one bedroom | No | |
| Ceiling fan in at least one living room or other conditioned area | No | |
| **Project score** | | |
| Water | ✔ 42 | Target 40 |
| Thermal Comfort | ✔ Pass | Target Pass |
| Energy | ✔ 65 | 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 4 star (> 6 but <= 7.5 L/min plus spray force and/or coverage tests) in all showers in the development. | | ✔ | ✔ |
| The applicant must install a toilet flushing system with a minimum rating of 5 star in each toilet in the development. | | ✔ | ✔ |
| The applicant must install taps with a minimum rating of 5 star in the kitchen in the development. | | ✔ | |
| The applicant must install basin taps with a minimum rating of 5 star in each bathroom in the development. | | ✔ | |
| **Alternative water** | | | |
| Rainwater tank | | | |
| The applicant must install a rainwater tank of at least 5000 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 200 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: | | | |
| • 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.) | | ✔ | ✔ |
| • a tap that is located within 10 metres of the swimming pool in the development | | ✔ | ✔ |
| • a tap that is located within 10 metres of the outdoor spa in the development | | ✔ | ✔ |
| **Swimming pool** | | | |

| Water Commitments | Show on DA plans | Show on CC/CDC plans & specs | Certifier check |
|---|---|---|---|
| The swimming pool must not have a volume greater than 45 kilolitres. | ✔ | ✔ | |
| The swimming pool must have a pool cover. | | ✔ | |
| The swimming pool must be outdoors. | ✔ | ✔ | |
| **Outdoor Spa** | | | |
| The spa must not have a volume greater than 6 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 | 257.0 square metres |
| floor - suspended floor/open subfloor | 51.0 square metres |
| floor - suspended floor above garage | All or part of floor area |

| 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: gas instantaneous with a performance of 5 stars. | ✔ | ✔ | ✔ |
| **Cooling system** | | | |
| The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 2.5 - 3.0 | | ✔ | ✔ |
| The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: 3-phase airconditioning; Energy rating: EER 2.5 - 3.0 | | ✔ | ✔ |
| **Heating system** | | | |
| The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 2.5 - 3.0 | | ✔ | ✔ |
| The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: 3-phase airconditioning; Energy rating: EER 2.5 - 3.0 | | ✔ | ✔ |
| **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: manual switch on/off | | ✔ | ✔ |
| Kitchen: individual fan, ducted to façade or roof; Operation control: manual switch on/off | | ✔ | ✔ |
| Laundry: individual fan, ducted to façade or roof; Operation control: manual switch on/off | | ✔ | ✔ |
| **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 5 of the bedrooms / study; | | ✔ | ✔ |
| • at least 4 of the living / dining rooms; | | ✔ | ✔ |
| • the kitchen; | | ✔ | ✔ |

| Energy Commitments | Show on DA plans | Show on CC/CDC plans & specs | Certifier check |
|---|---|---|---|
| • 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. | ✔ | ✔ | ✔ |
| The applicant must install a window and/or skylight in 4 bathroom(s)/toilet(s) in the development 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 construct each refrigerator space in the development so that it is "well ventilated", as defined in the BASIX definitions. | | ✔ | |
| 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. |