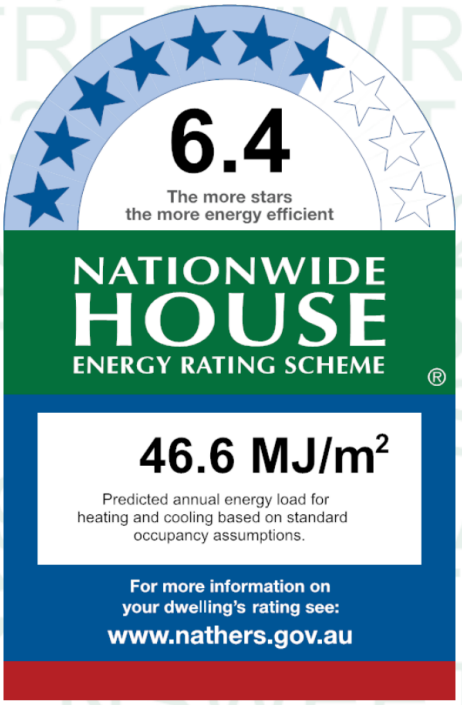
# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825592-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit U1, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 38.0 | Suburban |
| Unconditioned* | 0.0 | **NatHERS climate zone** |
| Total | 38.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| **Heating** | **Cooling** |
|---|---|
| **22.1** $MJ/m^2$ | **24.4** $MJ/m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **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=GObhvDWVI.
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?

### 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 |
| No Data Available | | | | | |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-011-18 A | AWS-011-18 A 541/542 Al Sliding Door SG 638CP | 4.4 | 0.59 | 0.56 | 0.62 |
| AWS-007-19 A | AWS-007-19 A 516 Al Awining Window SG 638CP | 4.9 | 0.53 | 0.50 | 0.56 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |

## Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-011-18 A | n/a | 2630 | 3000 | n/a | 45 | W | No |
| Kitchen/Living | AWS-007-19 A | n/a | 570 | 2998 | n/a | 90 | W | No |
| Kitchen/Living | AWS-007-19 A | n/a | 3200 | 1400 | n/a | 60 | SW | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Bedroom 1 | AWS-007-19 A | n/a | 2650 | 1400 | n/a | 90 | W | Yes |

## 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 |
|---|---|---|---|---|
| No Data Available | | | | |

* Refer to glossary.

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 3200 | 3200 | W | 1800 | YES |
| Kitchen/Living | EW-1 | 3200 | 1746 | SW | 2485 | YES |
| Kitchen/Living | EW-1 | 3200 | 4095 | W | 200 | NO |
| Bedroom 1 | EW-1 | 3200 | 2495 | W | 200 | NO |

## Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 21.00 | No insulation |
| IW-2 - Concrete Panel/Blocks filled, plasterboard | | 51.00 | No Insulation |

## Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living | Suspended Concrete Slab 150mm | 26.30 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Ceramic Tiles 8mm |
| Bathroom | Concrete Slab, Unit Below 150mm | 4.50 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 7.00 | None | No Insulation | Carpet+Rubber Underlay 18mm |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Concrete, Plasterboard | No insulation | No |
| Bathroom | Concrete, Plasterboard | No insulation | No |
| Bedroom 1 | Concrete, Plasterboard | No insulation | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 6 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Bathroom | 2 | Downlights - LED | 150 | Sealed |
| Bathroom | 1 | Exhaust Fans | 300 | Sealed |

* Refer to glossary.

| Location | Quantity | Type | Diameter (mm ) | Sealed/unsealed |
|---|---|---|---|---|
| Bedroom 1 | 2 | Downlights - LED | 150 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Bedroom 1 | 1 | 1200 |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| None Present | | | |

# 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). |

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# NatHERS Certificate No. 0004825618-02

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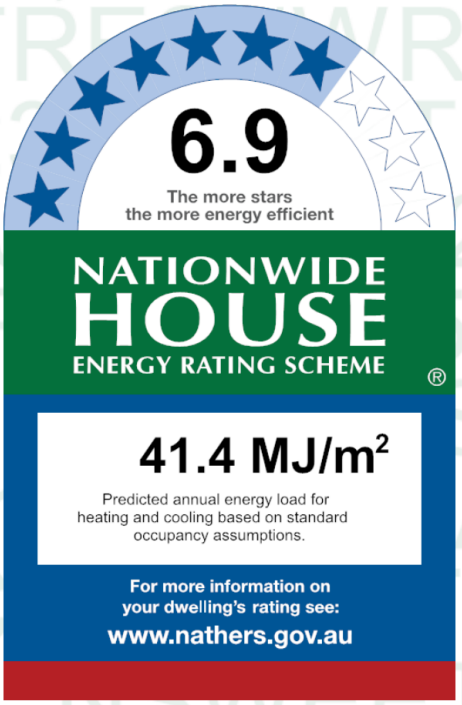


## Property

| | |
|---|---|
| **Address** | Unit U2, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 68.0 | Suburban |
| Unconditioned* | 0.0 | **NatHERS climate zone** |
| Total | 68.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| Heating | Cooling |
|---|---|
| 23.7 MJ/$m^2$ | 17.6 MJ/$m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **Declaration of interest** | None |

### About the rating

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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.

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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".

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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 |
| No Data Available | | | | | |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-066-03 A | AWS-066-03 A RES SERIES 516 FIXED WINDOW SG 638ComPlsClr | 3.9 | 0.62 | 0.59 | 0.65 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |
| AWS-011-18 A | AWS-011-18 A 541/542 Al Sliding Door SG 638CP | 4.4 | 0.59 | 0.56 | 0.62 |
| AWS-001-19 A | AWS-001-19 A 502/504 Al Sliding Window SG 638CP | 4.5 | 0.59 | 0.56 | 0.62 |

## Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Bed 2 | AWS-066-03 A | n/a | 2650 | 2300 | n/a | 00 | E | Yes |
| Bed 2 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Master Bed | VAN-004-08 A | n/a | 2100 | 600 | n/a | 90 | W | No |
| Master Bed | AWS-011-18 A | n/a | 2630 | 2300 | n/a | 45 | N | Yes |
| Kitch Tce Above | VAN-004-08 A | n/a | 2650 | 900 | n/a | 90 | N | Yes |
| Kitch Tce Above | VAN-004-08 A | n/a | 2650 | 900 | n/a | 90 | N | Yes |
| Kitch Tce Above | AWS-001-19 A | n/a | 2700 | 1244 | n/a | 45 | N | Yes |
| Kitch Tce Above | AWS-001-19 A | n/a | 2700 | 1679 | n/a | 45 | N | Yes |
| Kitch Tce Above | VAN-004-08 A | n/a | 2650 | 900 | n/a | 90 | N | Yes |
| Kitch Tce Above | AWS-011-18 A | n/a | 3200 | 3800 | n/a | 60 | E | No |
| Bed 2 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |

## 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 | | | | | | | | |

* Refer to glossary.

# External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| No Data Available | | | | |

# External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | AAC Cavity Panel Direct Fix | 0.50 | Medium | No insulation | No |
| EW-2 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Bed 2 | EW-2 | 3200 | 2895 | E | 400 | NO |
| Bed 2 | EW-2 | 3200 | 1500 | S | 0 | NO |
| Master Bed | EW-2 | 3200 | 595 | W | 200 | NO |
| Master Bed | EW-2 | 3200 | 2195 | W | 200 | NO |
| Master Bed | EW-2 | 3200 | 728 | NW | 237 | NO |
| Master Bed | EW-2 | 3200 | 721 | NW | 236 | NO |
| Master Bed | EW-2 | 3200 | 3395 | N | 1475 | YES |
| Kitch Tce Above | EW-2 | 3200 | 5704 | N | 225 | NO |
| Kitch Tce Above | EW-2 | 3200 | 4395 | E | 1900 | YES |
| Kitch Tce Above | EW-2 | 3200 | 1300 | W | 3050 | YES |
| Bed 2 | EW-2 | 3200 | 2000 | N | 2775 | YES |
| Bed 2 | EW-2 | 3200 | 595 | E | 400 | NO |

# Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Concrete Panel/Blocks filled, plasterboard | | 57.00 | No Insulation |
| IW-2 - Cavity wall, direct fix plasterboard, single gap | | 85.00 | No insulation |

# Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Entry/Hall | Concrete Slab, Unit Below 150mm | 8.80 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Bath | Concrete Slab, Unit Below 150mm | 6.40 | None | No Insulation | Ceramic Tiles 8mm |
| Bed 2 | Concrete Slab, Unit Below 150mm | 9.00 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Master Bed | Concrete Slab, Unit Below 150mm | 2.20 | None | No Insulation | Carpet+Rubber Underlay 18mm |

* Refer to glossary.

| Location | Construction | Area (m ) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Master Bed | Concrete Slab, Unit Below 150mm | 13.40 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Kitch Tce Above | Concrete Slab, Unit Below 150mm | 26.80 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Bed 2 | Concrete Slab, Unit Below 150mm | 1.70 | None | No Insulation | Carpet+Rubber Underlay 18mm |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Entry/Hall | Concrete, Plasterboard | No insulation | No |
| Bath | Concrete, Plasterboard | No insulation | No |
| Bed 2 | Concrete, Plasterboard | No insulation | No |
| Master Bed | Concrete, Plasterboard | No insulation | No |
| Master Bed | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Kitch Tce Above | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Bed 2 | Concrete, Plasterboard | Bulk Insulation R3.5 | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Entry/Hall | 2 | Downlights - Halogen | 450 | Sealed |
| Bath | 1 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bed 2 | 2 | Downlights - LED | 150 | Sealed |
| Master Bed | 4 | Downlights - LED | 150 | Sealed |
| Kitch Tce Above | 6 | Downlights - LED | 150 | Sealed |
| Kitch Tce Above | 1 | Exhaust Fans | 300 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Bed 2 | 1 | 1200 |
| Master Bed | 1 | 1200 |
| Kitch Tce Above | 1 | 1200 |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Waterproofing Membrane | No Added Insulation, No air Gap | 0.30 | Light |

* Refer to glossary.

# Explanatory notes

## About this report

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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.

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# Glossary

| | |
|---|---|
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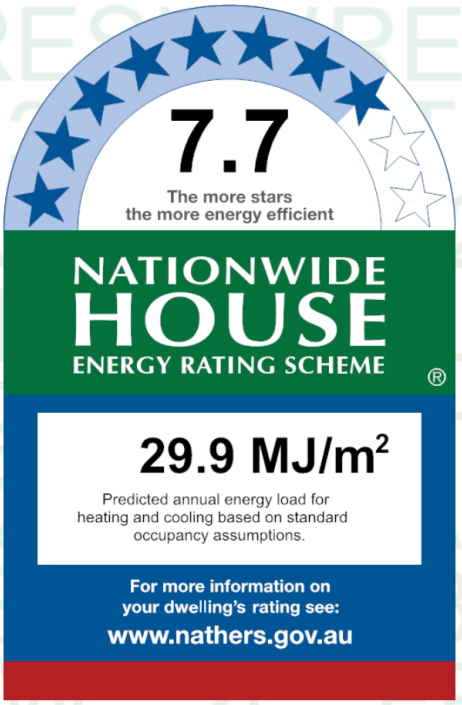
| **Assessed floor area** | the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents. |
| **Ceiling penetrations** | features that require a penetration to the ceiling, including downlights, vents, 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). |

# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825642-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit 3, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 34.0 | Suburban |
| Unconditioned* | 0.0 | **NatHERS climate zone** |
| Total | 34.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| Heating | Cooling |
|---|---|
| **18.1** | **11.9** |
| $MJ/m^2$ | $MJ/m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **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=wDSVohwcW.
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### 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.

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# 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 |
| No Data Available | | | | | |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-011-18 A | AWS-011-18 A 541/542 Al Sliding Door SG 638CP | 4.4 | 0.59 | 0.56 | 0.62 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |
| AWS-066-03 A | AWS-066-03 A RES SERIES 516 FIXED WINDOW SG 638ComPlsClr | 3.9 | 0.62 | 0.59 | 0.65 |

## Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-011-18 A | n/a | 2630 | 2100 | n/a | 45 | E | No |
| Kitchen/Living | AWS-011-18 A | n/a | 2630 | 1200 | n/a | 45 | NE | No |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |
| Bedroom 1 | AWS-066-03 A | n/a | 2650 | 1600 | n/a | 00 | E | Yes |

## 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 |
|---|---|---|---|---|
| No Data Available | | | | |

* Refer to glossary.

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 3200 | 2400 | E | 1900 | YES |
| Kitchen/Living | EW-1 | 3200 | 1700 | NE | 2438 | YES |
| Kitchen/Living | EW-1 | 3200 | 2195 | E | 400 | NO |
| Bedroom 1 | EW-1 | 3200 | 2795 | E | 400 | NO |

## Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Concrete Panel/Blocks filled, plasterboard | | 57.00 | No Insulation |
| IW-2 - Cavity wall, direct fix plasterboard, single gap | | 24.00 | No insulation |

## Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living | Suspended Concrete Slab 150mm | 22.30 | Totally Open | Bulk Insulation in Contact with Floor R1.2 | Cork Tiles or Parquetry 8mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 8.70 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Suspended Concrete Slab 150mm | 3.20 | Totally Open | Bulk Insulation in Contact with Floor R1.2 | Ceramic Tiles 8mm |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Concrete, Plasterboard | No insulation | No |
| Bedroom 1 | Concrete, Plasterboard | No insulation | No |
| Bath | Concrete, Plasterboard | No insulation | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 5 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 1 | 2 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Downlights - LED | 450 | Sealed |

* Refer to glossary.

| Location | Quantity | Type | Diameter (mm ) | Sealed/unsealed |
|---|---|---|---|---|
| Bath | 1 | Exhaust Fans | 300 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Kitchen/Living | 1 | 1200 |
| Bedroom 1 | 1 | 1200 |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| None Present | | | |

# Explanatory notes

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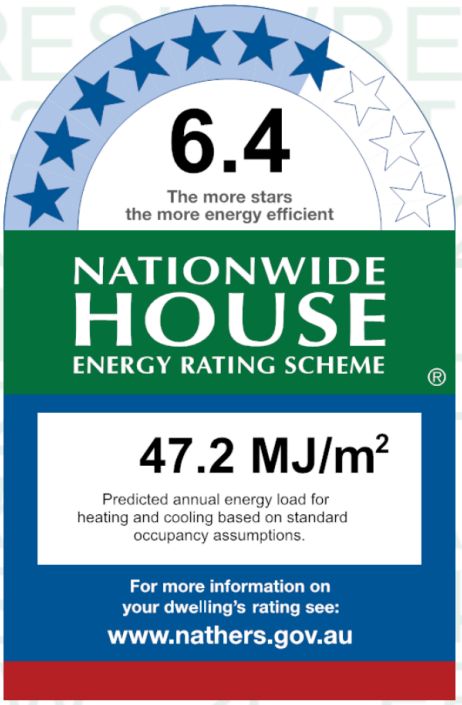
# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825675-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit 4, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 56.0 | Suburban |
| Unconditioned* | 0.0 | **NatHERS climate zone** |
| Total | 56.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| Heating | Cooling |
|---|---|
| 18.4 MJ/$m^2$ | 28.8 MJ/$m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **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.

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

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

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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".

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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 |
| No Data Available | | | | | |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-089-62 A | AWS-089-62 A RES SERIES 704 FLUSH SLIDING DOOR DG LightbridgeNeutralSI_638_12_5mm | 2.2 | 0.40 | 0.38 | 0.42 |
| AWS-066-03 A | AWS-066-03 A RES SERIES 516 FIXED WINDOW SG 638ComPlsClr | 3.9 | 0.62 | 0.59 | 0.65 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |

## Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 4500 | n/a | 75 | N | No |
| Kitchen/Living | AWS-066-03 A | n/a | 2650 | 2800 | n/a | 00 | E | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Bedroom 1 | AWS-066-03 A | n/a | 2650 | 1600 | n/a | 00 | E | Yes |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |

## 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 |
|---|---|
| GEN-04-006a | Single-glazed clear, Timber and Aluminium Frame |

## Skylight *schedule*

| Location | Skylight ID | Skylight No. | Skylight shaft length (mm) | Area ($m^2$) | Orientation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| Bath | GEN-04-006a | n/a | 150 | 0.40 | W | None | Yes | 0.50 |

* Refer to glossary.

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| No Data Available | | | | |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Fibro Cavity Panel Direct Fix | 0.23 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 2700 | 5700 | N | 2250 | NO |
| Kitchen/Living | EW-1 | 2700 | 7395 | E | 300 | NO |
| Bedroom 1 | EW-1 | 2700 | 3795 | E | 300 | NO |
| Bedroom 1 | EW-1 | 2700 | 3000 | S | 0 | NO |

## Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Concrete Panel/Blocks filled, plasterboard | | 38.00 | No Insulation |
| IW-2 - Cavity wall, direct fix plasterboard, single gap | | 36.00 | No insulation |

## Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 30.00 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living | Suspended Concrete Slab 150mm | 4.00 | Totally Open | No Insulation | Cork Tiles or Parquetry 8mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 11.20 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Entry/Ldry | Concrete Slab, Unit Below 150mm | 6.70 | None | No Insulation | 20/80 Ceramic/Cork |
| Bath | Concrete Slab, Unit Below 150mm | 4.60 | None | No Insulation | Ceramic Tiles 8mm |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Bedroom 1 | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Entry/Ldry | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Bath | Concrete, Plasterboard | Bulk Insulation R3.5 | No |

* Refer to glossary.

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 8 | Downlights - Halogen | 450 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 1 | 2 | Downlights - LED | 150 | Sealed |
| Entry/Ldry | 2 | Downlights - LED | 450 | Sealed |
| Entry/Ldry | 1 | Exhaust Fans | 300 | Sealed |
| Bath | 1 | Downlights - LED | 450 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Kitchen/Living | 1 | 1200 |
| Bedroom 1 | 1 | 1200 |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Waterproofing Membrane | No Added Insulation, No air Gap | 0.23 | Light |

* Refer to glossary.

# Explanatory notes

## About this report

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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.

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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.

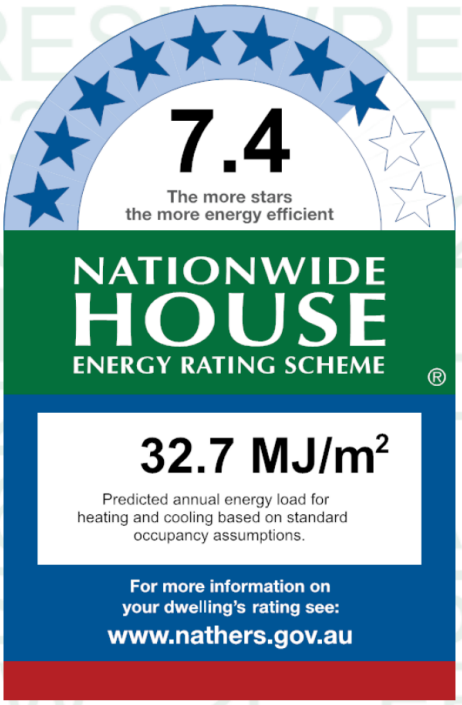
# Glossary

| | |
|---|---|
| **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). |

* Refer to glossary.

# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825576-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit 5, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 64.0 | Suburban |
| Unconditioned* | 6.0 | **NatHERS climate zone** |
| Total | 70.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| Heating | Cooling |
|---|---|
| **13.4** | **19.3** |
| $MJ/m^2$ | $MJ/m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **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=xYqckciQV.
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?

### 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 |
| No Data Available | | | | | |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |
| AWS-007-19 A | AWS-007-19 A 516 Al Awining Window SG 638CP | 4.9 | 0.53 | 0.50 | 0.56 |
| AWS-011-18 A | AWS-011-18 A 541/542 Al Sliding Door SG 638CP | 4.4 | 0.59 | 0.56 | 0.62 |
| AWS-066-03 A | AWS-066-03 A RES SERIES 516 FIXED WINDOW SG 638ComPlsClr | 3.9 | 0.62 | 0.59 | 0.65 |

# Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Kitchen/Living | AWS-007-19 A | n/a | 2650 | 1400 | n/a | 50 | W | Yes |
| Kitchen/Living | AWS-011-18 A | n/a | 2650 | 5600 | n/a | 75 | N | No |
| Bath | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Bed 1 Tce Above | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Bed 1 Tce Above | AWS-066-03 A | n/a | 2650 | 900 | n/a | 00 | W | No |
| Bedroom 2 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Bedroom 2 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Bedroom 2 | AWS-066-03 A | n/a | 2650 | 1800 | n/a | 00 | W | Yes |
| Bed 1 Tce Above | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Bed 1 Tce Above | AWS-066-03 A | n/a | 2650 | 900 | n/a | 00 | W | Yes |

# 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 |
| DG-Generic-02 A | Glass | 4.2 | 0.72 | 0.72 | 0.72 |

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 |
|---|---|---|---|---|---|---|---|---|
| Bath | DG-Generic-02 A | n/a | 90 | 555 | 1400 | N | 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 | | | | | | | | |

* Refer to glossary.

# External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| No Data Available | | | | |

# External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | AAC cavity panel on battens | 0.30 | Light | Foil, Anti-glare one side + Bulk Insulation R1.5 | No |
| EW-2 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 2700 | 1595 | W | 400 | NO |
| Kitchen/Living | EW-2 | 2700 | 3100 | W | 400 | NO |
| Kitchen/Living | EW-2 | 2700 | 5900 | N | 900 | NO |
| Bath | EW-2 | 2700 | 2490 | W | 400 | NO |
| Bed 1 Tce Above | EW-2 | 2700 | 1290 | W | 400 | NO |
| Bedroom 2 | EW-2 | 2700 | 3790 | W | 400 | NO |
| Bed 1 Tce Above | EW-1 | 2700 | 1695 | W | 400 | NO |

# Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 68.00 | No insulation |
| IW-2 - Concrete Panel/Blocks filled, plasterboard | | 55.00 | No Insulation |

# Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 32.60 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Bath | Concrete Slab, Unit Below 150mm | 6.20 | None | No Insulation | Ceramic Tiles 8mm |
| Entry | Concrete Slab, Unit Below 150mm | 2.70 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 2.90 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Bed 1 Tce Above | Concrete Slab, Unit Below 150mm | 8.60 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bedroom 2 | Concrete Slab, Unit Below 150mm | 11.00 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bed 1 Tce Above | Concrete Slab, Unit Below 150mm | 5.60 | None | No Insulation | Carpet+Rubber Underlay 18mm |

* Refer to glossary.

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Bath | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Entry | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Kitchen/Living | Concrete, Plasterboard | No insulation | No |
| Bed 1 Tce Above | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Bedroom 2 | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Bed 1 Tce Above | Concrete, Plasterboard | No insulation | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 8 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 2 | Exhaust Fans | 300 | Sealed |
| Bath | 1 | Downlights - Halogen | 450 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Entry | 1 | Downlights - LED | 150 | Sealed |
| Bed 1 Tce Above | 3 | Downlights - Halogen | 450 | Sealed |
| Bedroom 2 | 2 | Downlights - Halogen | 450 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Kitchen/Living | 1 | 1200 |
| Bed 1 Tce Above | 1 | 1200 |
| Bedroom 2 | 1 | 1200 |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Waterproofing Membrane | No Added Insulation, No air Gap | 0.30 | Light |

* Refer to glossary.

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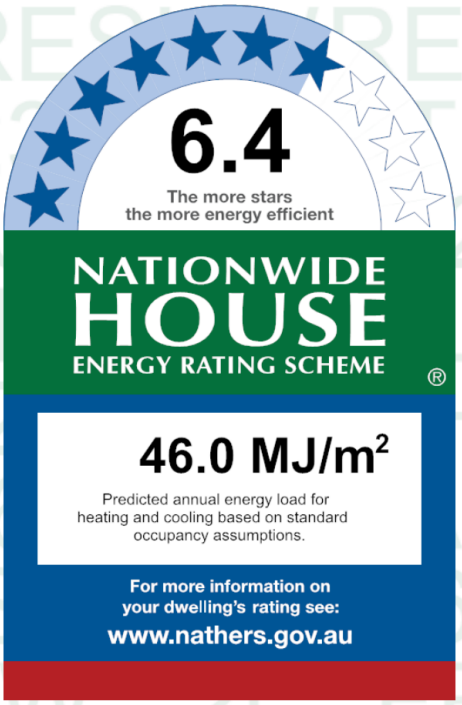
# Glossary

| | |
|---|---|
| **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). |

# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825626-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit 6, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 53.0 | Suburban |
| Unconditioned* | 0.0 | **NatHERS climate zone** |
| Total | 53.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| Heating | Cooling |
|---|---|
| 25.2 MJ/$m^2$ | 20.8 MJ/$m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **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=OdgVWjTFI.
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?

### 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 |
| No Data Available | | | | | |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-089-62 A | AWS-089-62 A RES SERIES 704 FLUSH SLIDING DOOR DG LightbridgeNeutralSI_638_12_5mm | 2.2 | 0.40 | 0.38 | 0.42 |
| AWS-071-33 A | AWS-071-33 A RES SERIES 616 FIXED WINDOW DG 4mmLoE-366-12Ar-4mmClr | 2.7 | 0.25 | 0.24 | 0.26 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |

## Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 3400 | n/a | 75 | E | No |
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 1900 | n/a | 45 | N | No |
| Kitchen/Living | AWS-071-33 A | n/a | 2650 | 1600 | n/a | 00 | E | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Bed 1 Tce Above | AWS-071-33 A | n/a | 2650 | 2600 | n/a | 00 | E | Yes |
| Bed 1 Tce Above | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |
| Bed 1 Tce Above | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | 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 | | | | | | | | |

* Refer to glossary.

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| No Data Available | | | | |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Tilt up Concrete | 0.30 | Light | Bulk Insulation R1.2 | No |
| EW-2 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 2700 | 3300 | N | 0 | NO |
| Kitchen/Living | EW-2 | 2700 | 4200 | E | 2400 | YES |
| Kitchen/Living | EW-2 | 2700 | 2195 | N | 4200 | YES |
| Kitchen/Living | EW-2 | 2700 | 3495 | E | 200 | NO |
| Bed 1 Tce Above | EW-2 | 2700 | 3995 | E | 200 | NO |
| Bed 1 Tce Above | EW-2 | 2700 | 2195 | S | 0 | NO |

## Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 51.00 | No insulation |
| IW-2 - Concrete Panel/Blocks filled, plasterboard | | 41.00 | No Insulation |

## Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living | Suspended Concrete Slab 150mm | 25.10 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Cork Tiles or Parquetry 8mm |
| Bath | Suspended Concrete Slab 150mm | 4.70 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Ceramic Tiles 8mm |
| Bedroom 1 | Suspended Concrete Slab 150mm | 5.20 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Carpet+Rubber Underlay 18mm |
| Hall/Ldry | Suspended Concrete Slab 150mm | 2.40 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | 60/40 Ceramic/Cork |
| Kitchen/Living | Suspended Concrete Slab 150mm | 7.40 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Cork Tiles or Parquetry 8mm |
| Bed 1 Tce Above | Suspended Concrete Slab 150mm | 8.50 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Carpet+Rubber Underlay 18mm |

* Refer to glossary.

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Concrete, Plasterboard | No insulation | No |
| Bath | Concrete, Plasterboard | No insulation | No |
| Bedroom 1 | Concrete, Plasterboard | No insulation | No |
| Hall/Ldry | Concrete, Plasterboard | No insulation | No |
| Kitchen/Living | Concrete, Plasterboard | No insulation | No |
| Bed 1 Tce Above | Concrete, Plasterboard | No insulation | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 6 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Bath | 1 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 1 | 1 | Downlights - LED | 150 | Sealed |
| Hall/Ldry | 2 | Downlights - LED | 450 | Sealed |
| Hall/Ldry | 1 | Exhaust Fans | 300 | Sealed |
| Kitchen/Living | 1 | Downlights - LED | 450 | Sealed |
| Bed 1 Tce Above | 1 | Downlights - LED | 450 | Unsealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Kitchen/Living | 1 | 1200 |
| Bed 1 Tce Above | 1 | 1200 |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| None Present | | | |

* Refer to glossary.

# 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.

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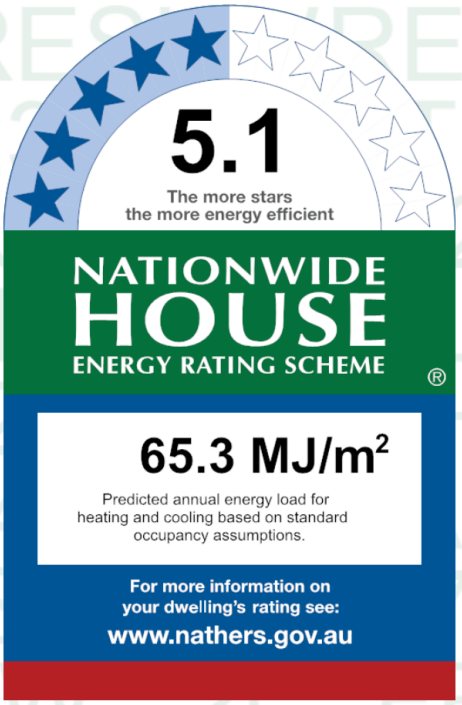
# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825634-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
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| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

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| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

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| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 46.0 | Suburban |
| Unconditioned* | 5.0 | **NatHERS climate zone** |
| Total | 51.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| **Heating** | **Cooling** |
|---|---|
| **41.1** $MJ/m^2$ | **24.1** $MJ/m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **Declaration of interest** | None |

### About the rating

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### Windows

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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 |
| No Data Available | | | | | |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
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| AWS-066-03 A | AWS-066-03 A RES SERIES 516 FIXED WINDOW SG 638ComPlsClr | 3.9 | 0.62 | 0.59 | 0.65 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |
| AWS-007-19 A | AWS-007-19 A 516 Al Awining Window SG 638CP | 4.9 | 0.53 | 0.50 | 0.56 |

## Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 3400 | n/a | 75 | E | No |
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 1900 | n/a | 45 | N | No |
| Kitchen/Living | AWS-066-03 A | n/a | 2650 | 1500 | n/a | 00 | E | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Bath Tce Above | AWS-007-19 A | n/a | 500 | 1700 | n/a | 90 | S | Yes |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |
| Bed 1 Tce Above | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Bed 1 Tce Above | AWS-066-03 A | n/a | 2650 | 1300 | n/a | 00 | E | Yes |
| Bed 1 Tce Above | AWS-066-03 A | n/a | 500 | 3580 | n/a | 00 | S | 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 | | | | | | | | |

* Refer to glossary.

# External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| No Data Available | | | | |

# External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Tilt up Concrete | 0.30 | Light | No insulation | No |
| EW-2 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + Bulk Insulation R2.5 | No |
| EW-3 | AAC cavity panel on battens | 0.30 | Light | Foil, Anti-glare one side + Bulk Insulation R1.5 | No |

# External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 2700 | 3300 | N | 0 | NO |
| Kitchen/Living | EW-2 | 2700 | 4200 | E | 2400 | YES |
| Kitchen/Living | EW-2 | 2700 | 2200 | N | 4200 | YES |
| Kitchen/Living | EW-2 | 2700 | 2995 | E | 200 | NO |
| Bath Tce Above | EW-2 | 2700 | 1895 | S | 0 | NO |
| Bedroom 1 | EW-3 | 2700 | 1390 | E | 200 | NO |
| Bed 1 Tce Above | EW-2 | 2700 | 2595 | E | 200 | NO |
| Bed 1 Tce Above | EW-2 | 2700 | 3595 | S | 0 | NO |

# Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 41.00 | No insulation |
| IW-2 - Concrete Panel/Blocks filled, plasterboard | | 30.00 | No Insulation |

# Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living | Suspended Concrete Slab 150mm | 30.10 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Cork Tiles or Parquetry 8mm |
| Bath Tce Above | Suspended Concrete Slab 150mm | 4.70 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Ceramic Tiles 8mm |
| Bedroom 1 | Suspended Concrete Slab 150mm | 4.70 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Carpet+Rubber Underlay 18mm |
| Hall/Ldry | Suspended Concrete Slab 150mm | 2.40 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | 60/40 Ceramic/Cork |
| Bed 1 Tce Above | Suspended Concrete Slab 150mm | 9.10 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Carpet+Rubber Underlay 18mm |

* Refer to glossary.

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Concrete, Plasterboard | No insulation | No |
| Bath Tce Above | Concrete, Plasterboard | Bulk Insulation R3.5 | No |
| Bedroom 1 | Concrete, Plasterboard | No insulation | No |
| Hall/Ldry | Concrete, Plasterboard | No insulation | No |
| Bed 1 Tce Above | Concrete, Plasterboard | Bulk Insulation R3.5 | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 8 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Bath Tce Above | 1 | Downlights - LED | 150 | Sealed |
| Bath Tce Above | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 1 | 1 | Downlights - LED | 150 | Sealed |
| Hall/Ldry | 2 | Downlights - LED | 450 | Sealed |
| Hall/Ldry | 1 | Exhaust Fans | 300 | Sealed |
| Bed 1 Tce Above | 1 | Downlights - LED | 450 | Unsealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Kitchen/Living | 1 | 1200 |
| Bed 1 Tce Above | 1 | 1200 |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Waterproofing Membrane | No Added Insulation, No air Gap | 0.30 | Light |

* Refer to glossary.

# Explanatory notes

## About this report

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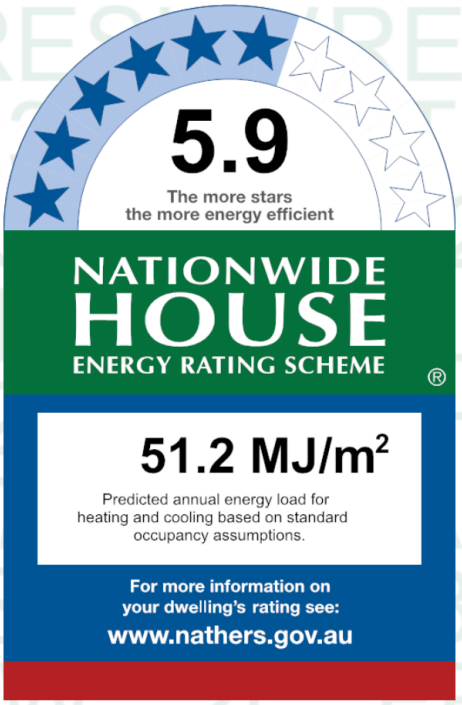
# Glossary

| | |
|---|---|
| **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). |

# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825667-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit 8, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 48.0 | Suburban |
| Unconditioned* | 0.0 | **NatHERS climate zone** |
| Total | 48.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| **Heating** | **Cooling** |
|---|---|
| **22.2** MJ/$m^2$ | **29.1** MJ/$m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **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=urslvzmjF.
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?

### 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 |
| No Data Available | | | | | |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-089-62 A | AWS-089-62 A RES SERIES 704 FLUSH SLIDING DOOR DG LightbridgeNeutralSI_638_12_5mm | 2.2 | 0.40 | 0.38 | 0.42 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |
| AWS-071-33 A | AWS-071-33 A RES SERIES 616 FIXED WINDOW DG 4mmLoE-366-12Ar-4mmClr | 2.7 | 0.25 | 0.24 | 0.26 |

## Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 3200 | n/a | 60 | S | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Kitchen/Living | AWS-071-33 A | n/a | 2650 | 1300 | n/a | 00 | W | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Kitchen/Living | AWS-071-33 A | n/a | 2650 | 1000 | n/a | 00 | W | No |
| Bedroom 1 | AWS-071-33 A | n/a | 500 | 2900 | n/a | 00 | S | No |
| Bedroom 1 | AWS-089-62 A | n/a | 2650 | 2200 | n/a | 60 | W | 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 | | | | | | | | |

* Refer to glossary.

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| No Data Available | | | | |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 2700 | 4095 | S | 2400 | YES |
| Kitchen/Living | EW-1 | 2700 | 3000 | W | 0 | NO |
| Kitchen/Living | EW-1 | 2700 | 700 | N | 0 | YES |
| Kitchen/Living | EW-1 | 2700 | 3400 | W | 0 | YES |
| Bedroom 1 | EW-1 | 2700 | 2900 | S | 0 | NO |
| Bedroom 1 | EW-1 | 2700 | 2395 | W | 4783 | YES |

## Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Concrete Panel/Blocks filled, plasterboard | | 41.00 | No Insulation |
| IW-2 - Cavity wall, direct fix plasterboard, single gap | | 46.00 | No insulation |

## Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Entry/Stairs | Suspended Concrete Slab 150mm | 9.40 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Cork Tiles or Parquetry 8mm |
| Bath | Suspended Concrete Slab 150mm | 4.00 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Ceramic Tiles 8mm |
| Bedroom 1 | Suspended Concrete Slab 150mm | 3.20 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Carpet+Rubber Underlay 18mm |
| Kitchen/Living | Suspended Concrete Slab 150mm | 24.50 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Cork Tiles or Parquetry 8mm |
| Bedroom 1 | Suspended Concrete Slab 150mm | 6.80 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Carpet+Rubber Underlay 18mm |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Entry/Stairs | Concrete, Plasterboard | No insulation | No |

* Refer to glossary.

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Bath | Concrete, Plasterboard | No insulation | No |
| Bedroom 1 | Concrete, Plasterboard | No insulation | No |
| Kitchen/Living | Concrete, Plasterboard | No insulation | No |
| Bedroom 1 | Concrete, Plasterboard | Bulk Insulation R3.5 | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Entry/Stairs | 3 | Downlights - LED | 150 | Sealed |
| Entry/Stairs | 1 | Exhaust Fans | 300 | Sealed |
| Bath | 1 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 1 | 1 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 10 | Downlights - LED | 450 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 1 | 1 | Downlights - LED | 450 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Bedroom 1 | 1 | 1200 |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Waterproofing Membrane | No Added Insulation, No air Gap | 0.30 | Light |

* Refer to glossary.

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| **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. |
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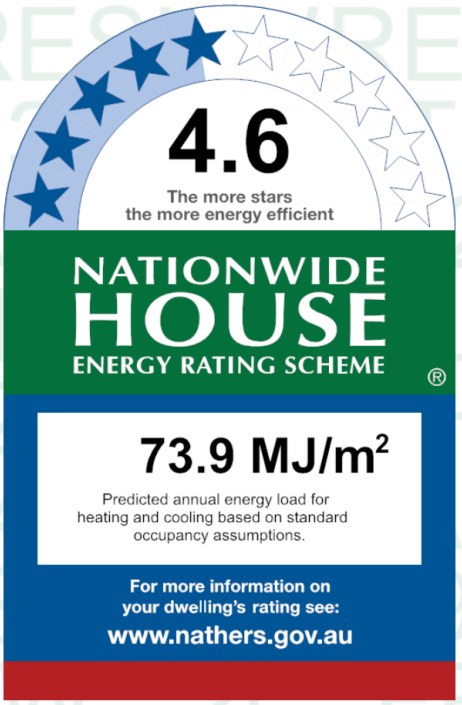
# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825584-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit 9, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 87.0 | Suburban |
| Unconditioned* | 10.0 | **NatHERS climate zone** |
| Total | 97.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| Heating | Cooling |
|---|---|
| 45.2 MJ/$m^2$ | 28.6 MJ/$m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **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=hPVEyUzbR.
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?

### 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-003-01 A | ALM-003-01 A Aluminium A DG Air Fill Clear-Clear | 4.8 | 0.51 | 0.51 | 0.51 |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-089-62 A | AWS-089-62 A RES SERIES 704 FLUSH SLIDING DOOR DG LightbridgeNeutralSI_638_12_5mm | 2.2 | 0.40 | 0.38 | 0.42 |
| AWS-066-03 A | AWS-066-03 A RES SERIES 516 FIXED WINDOW SG 638ComPlsClr | 3.9 | 0.62 | 0.59 | 0.65 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |
| AWS-011-18 A | AWS-011-18 A 541/542 Al Sliding Door SG 638CP | 4.4 | 0.59 | 0.56 | 0.62 |

# Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 3320 | n/a | 60 | E | No |
| Kitchen/Living | AWS-066-03 A | n/a | 500 | 4000 | n/a | 00 | E | No |
| Kitchen/Living | ALM-003-01 A | n/a | 555 | 1400 | n/a | 00 | N | No Shading |
| Upper Bath | VAN-004-08 A | n/a | 2650 | 590 | n/a | 90 | W | No |
| Upper Bath | AWS-066-03 A | n/a | 2650 | 590 | n/a | 00 | W | Yes |
| Upper Bath | AWS-066-03 A | n/a | 500 | 2499 | n/a | 00 | W | No |
| Master Bedroom | VAN-004-08 A | n/a | 2000 | 600 | n/a | 90 | S | No |
| Master Bedroom | AWS-066-03 A | n/a | 500 | 4000 | n/a | 00 | S | No |
| Master Bedroom | AWS-066-03 A | n/a | 500 | 2300 | n/a | 00 | W | Yes |
| Master Bedroom | AWS-066-03 A | n/a | 500 | 2299 | n/a | 00 | W | Yes |
| Master Bedroom | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Master Bedroom | AWS-066-03 A | n/a | 500 | 1199 | n/a | 00 | W | No |
| Entry | VAN-004-08 A | n/a | 2700 | 733 | n/a | 90 | W | Yes |
| Entry | VAN-004-08 A | n/a | 2700 | 733 | n/a | 90 | W | Yes |
| Entry | AWS-066-03 A | n/a | 2700 | 733 | n/a | 00 | W | Yes |
| Stairwell | VAN-004-08 A | n/a | 3250 | 733 | n/a | 90 | W | Yes |
| Stairwell | VAN-004-08 A | n/a | 3250 | 733 | n/a | 90 | W | Yes |
| Stairwell | AWS-066-03 A | n/a | 3250 | 733 | n/a | 00 | W | Yes |
| Living 1 | AWS-089-62 A | n/a | 2650 | 1900 | n/a | 45 | N | No |
| Living 1 | AWS-066-03 A | n/a | 2650 | 1500 | n/a | 00 | E | No |
| Living 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Living 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | Yes |
| Living 1 | AWS-066-03 A | n/a | 500 | 4000 | n/a | 00 | E | No |
| Living 1 | AWS-011-18 A | n/a | 2650 | 3400 | n/a | 60 | S | No |
| Living 1 | AWS-066-03 A | n/a | 500 | 4000 | n/a | 00 | S | No |
| Bedroom 2 | AWS-011-18 A | n/a | 2650 | 3000 | n/a | 60 | S | No |
| Bedroom 2 | AWS-066-03 A | n/a | 500 | 3699 | n/a | 00 | S | 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-010-01 W | Glass | 2.5 | 0.21 | 0.20 | 0.22 |

* Refer to glossary.

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Height (mm) | Width (mm) | Orientation | Outdoor shade | Indoor shade |
|---|---|---|---|---|---|---|---|---|
| Upper Bath | VEL-010-01 W | n/a | 90 | 555 | 1400 | N | 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 |
|---|---|---|---|---|
| No Data Available | | | | |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Fibro Cavity Panel Direct Fix | 0.23 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 3250 | 4195 | E | 2167 | YES |
| Upper Bath | EW-1 | 3250 | 2490 | W | 400 | NO |
| Master Bedroom | EW-1 | 3250 | 4495 | S | 1800 | NO |
| Master Bedroom | EW-1 | 3250 | 2300 | W | 517 | NO |
| Master Bedroom | EW-1 | 3250 | 700 | N | 5900 | YES |
| Master Bedroom | EW-1 | 3250 | 1195 | W | 867 | YES |
| Entry | EW-1 | 2700 | 2200 | W | 300 | NO |
| Stairwell | EW-1 | 3250 | 2195 | W | 400 | NO |
| Living 1 | EW-1 | 3250 | 2195 | N | 4200 | YES |
| Living 1 | EW-1 | 3250 | 4000 | E | 400 | NO |
| Living 1 | EW-1 | 3250 | 4595 | S | 1800 | NO |
| Bedroom 2 | EW-1 | 3250 | 3690 | S | 1800 | NO |

* Refer to glossary.

## Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 82.00 | No insulation |
| IW-2 - Concrete Panel/Blocks filled, plasterboard | | 63.00 | No Insulation |

## Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living /Entry | Concrete Above Plasterboard 150mm | 3.30 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 28.80 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Upper Bath | Concrete Slab, Unit Below 150mm | 6.20 | None | No Insulation | Ceramic Tiles 8mm |
| Master Bedroom | Concrete Slab, Unit Below 150mm | 14.60 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Entry | Suspended Concrete Slab 150mm | 10.10 | Enclosed | Bulk Insulation in Contact with Floor R1.2 | Cork Tiles or Parquetry 8mm |
| Stairwell/Entry | Concrete Above Plasterboard 150mm | 6.50 | | No Insulation | Carpet 10mm |
| Living 1 | Concrete Slab, Unit Below 150mm | 17.50 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Bedroom 2 | Concrete Slab, Unit Below 150mm | 12.50 | None | No Insulation | Carpet+Rubber Underlay 18mm |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Plasterboard | Bulk Insulation R3.5 | No |
| Upper Bath | Plasterboard | Bulk Insulation R3.5 | No |
| Master Bedroom | Plasterboard | Bulk Insulation R3.5 | No |
| Entry | Concrete, Plasterboard | Bulk Insulation R2.5 | No |
| Entry | Concrete Above Plasterboard | No Insulation | No |
| Stairwell | Plasterboard | Bulk Insulation R3.5 | No |
| Living 1 | Plasterboard | Bulk Insulation R3.5 | No |
| Bedroom 2 | Plasterboard | Bulk Insulation R3.5 | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 9 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 2 | Exhaust Fans | 300 | Sealed |
| Upper Bath | 1 | Downlights - LED | 150 | Sealed |
| Upper Bath | 1 | Exhaust Fans | 300 | Sealed |
| Master Bedroom | 2 | Downlights - LED | 150 | Sealed |

* Refer to glossary.

| Location | Quantity | Type | Diameter (mm ) | Sealed/unsealed |
|---|---|---|---|---|
| Entry | 2 | Downlights - LED | 150 | Sealed |
| Stairwell | 1 | Downlights - LED | 450 | Sealed |
| Living 1 | 4 | Downlights - LED | 450 | Sealed |
| Bedroom 2 | 2 | Downlights - LED | 450 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| No Data Available | | |

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Corrugated Iron | Bulk, Reflective Side Down, No Air Gap Above R1.3 | 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. |
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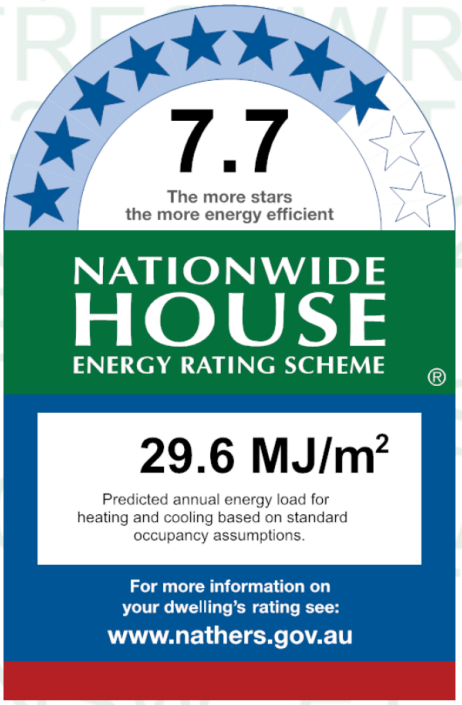
# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825600-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit 10, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 74.0 | Suburban |
| Unconditioned* | 0.0 | **NatHERS climate zone** |
| Total | 74.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| Heating | Cooling |
|---|---|
| 3.4 MJ/$m^2$ | 26.2 MJ/$m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **Declaration of interest** | None |

### About the rating

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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-003-01 A | ALM-003-01 A Aluminium A DG Air Fill Clear-Clear | 4.8 | 0.51 | 0.51 | 0.51 |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-066-03 A | AWS-066-03 A RES SERIES 516 FIXED WINDOW SG 638ComPlsClr | 3.9 | 0.62 | 0.59 | 0.65 |
| AWS-089-62 A | AWS-089-62 A RES SERIES 704 FLUSH SLIDING DOOR DG LightbridgeNeutralSI_638_12_5mm | 2.2 | 0.40 | 0.38 | 0.42 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |

## Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-066-03 A | n/a | 2650 | 2200 | n/a | 00 | W | Yes |
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 4000 | n/a | 60 | E | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Kitchen/Living | ALM-003-01 A | n/a | 555 | 1400 | n/a | 00 | N | No Shading |
| Upper Bath | ALM-003-01 A | n/a | 555 | 1400 | n/a | 00 | N | No Shading |
| Master Bedroom | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Master Bedroom | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Master Bedroom | AWS-066-03 A | n/a | 2650 | 2000 | n/a | 00 | W | No |
| Entry | AWS-066-03 A | n/a | 2650 | 2200 | n/a | 00 | W | Yes |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Bedroom 1 | AWS-066-03 A | n/a | 2650 | 2000 | n/a | 00 | W | Yes |

## 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 | | | | | | | | |

* Refer to glossary.

# External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| No Data Available | | | | |

# External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + Bulk Insulation R2.5 | No |
| EW-2 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + Bulk Insulation R2.5 | No |
| EW-3 | AAC cavity panel on battens | 0.30 | Light | Foil, Anti-glare one side + Bulk Insulation R1.5 | No |

# External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 2700 | 2195 | W | 400 | YES |
| Kitchen/Living | EW-1 | 2700 | 5500 | E | 2500 | NO |
| Master Bedroom | EW-1 | 2700 | 3300 | W | 100 | NO |
| Master Bedroom | EW-1 | 2700 | 300 | N | 2200 | YES |
| Entry | EW-2 | 2700 | 2195 | W | 300 | YES |
| Bedroom 1 | EW-2 | 2700 | 3300 | W | 0 | NO |
| Bedroom 1 | EW-3 | 2700 | 300 | N | 2200 | YES |

# Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Concrete Panel/Blocks filled, plasterboard | | 92.00 | No Insulation |
| IW-2 - Cavity wall, direct fix plasterboard, single gap | | 61.00 | No insulation |

# Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living /Entry | Concrete Above Plasterboard 150mm | 6.70 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living /Bedroom 1 | Concrete Above Plasterboard 150mm | 1.50 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living /WC | Concrete Above Plasterboard 150mm | 2.60 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 26.10 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Upper Bath/Bedroom 1 | Concrete Above Plasterboard 150mm | 1.20 | | No Insulation | Ceramic Tiles 8mm |
| Upper Bath | Concrete Slab, Unit Below 150mm | 3.20 | None | No Insulation | Ceramic Tiles 8mm |
| Master Bedroom /Bedroom 1 | Concrete Above Plasterboard 150mm | 12.10 | | No Insulation | Carpet+Rubber Underlay 18mm |

* Refer to glossary.

| Location | Construction | Area (m ) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Entry | Concrete Slab, Unit Below 150mm | 6.50 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 15.00 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| WC | Concrete Slab, Unit Below 150mm | 2.30 | None | No Insulation | Ceramic Tiles 8mm |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Plasterboard | Bulk Insulation R3.5 | No |
| Upper Bath | Plasterboard | Bulk Insulation R3.5 | No |
| Master Bedroom | Plasterboard | Bulk Insulation R3.5 | No |
| Entry | Concrete, Plasterboard | Bulk Insulation R2.5 | No |
| Entry | Concrete Above Plasterboard | No Insulation | No |
| Bedroom 1 | Concrete, Plasterboard | Bulk Insulation R2.5 | No |
| Bedroom 1 | Concrete Above Plasterboard | No Insulation | No |
| WC | Concrete, Plasterboard | Bulk Insulation R2.5 | No |
| WC | Concrete Above Plasterboard | No Insulation | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 11 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 2 | Exhaust Fans | 300 | Sealed |
| Upper Bath | 1 | Downlights - LED | 150 | Sealed |
| Upper Bath | 1 | Exhaust Fans | 300 | Sealed |
| Master Bedroom | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 2 | Downlights - LED | 450 | Sealed |
| WC | 1 | Downlights - LED | 450 | Sealed |
| WC | 1 | Exhaust Fans | 300 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Kitchen/Living | 1 | 1200 |
| Master Bedroom | 1 | 1200 |
| Bedroom 1 | 1 | 1200 |

* Refer to glossary.

# **Roof** *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Corrugated Iron | Bulk, Reflective Side Down, No Air Gap Above R1.3 | 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.

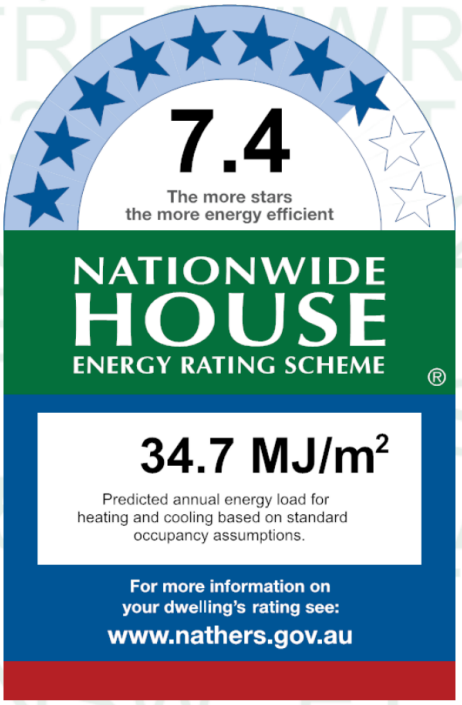
Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

# 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). |

# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 0004825659-02

**Generated on 23 Mar 2021 using BERS Pro v4.4.0.2 (3.21)**




## Property

| | |
|---|---|
| **Address** | Unit 11, 50 Lawrence Street , Freshwater , NSW , 2096 |
| **Lot/DP** | 1/571975 |
| **NCC Class*** | 2 |
| **Type** | New Dwelling |

## Plans

| | |
|---|---|
| **Main Plan** | 19045 |
| **Prepared by** | CKDS Architecture |

## Construction and environment

| **Assessed floor area ($m^2$)*** | | **Exposure Type** |
|---|---|---|
| Conditioned* | 74.0 | Suburban |
| Unconditioned* | 5.0 | **NatHERS climate zone** |
| Total | 80.0 | 56 |
| Garage | 0.0 | |

## Thermal performance

| **Heating** | **Cooling** |
|---|---|
| **6.7** $MJ/m^2$ | **28.0** $MJ/m^2$ |

## Accredited assessor

| | |
|---|---|
| **Name** | Terry Chapman |
| **Business name** | CHAPMAN ENVIRONMENTAL SERVICES PTY LTD |
| **Email** | terry@basixcertificates.com.au |
| **Phone** | 0414 265 292 |
| **Accreditation No.** | 20920 |
| **Assessor Accrediting Organisation** | ABSA |
| **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=DaNldTMGA.
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?

### 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-003-01 A | ALM-003-01 A Aluminium A DG Air Fill Clear-Clear | 4.8 | 0.51 | 0.51 | 0.51 |

### Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| | | | | SHGC lower limit | SHGC upper limit |
| AWS-089-62 A | AWS-089-62 A RES SERIES 704 FLUSH SLIDING DOOR DG LightbridgeNeutralSI_638_12_5mm | 2.2 | 0.40 | 0.38 | 0.42 |
| VAN-004-08 A | VAN-004-08 A SERIES 525 LOUVRE WINDOW SG 6ET | 4.5 | 0.54 | 0.51 | 0.57 |
| AWS-071-33 A | AWS-071-33 A RES SERIES 616 FIXED WINDOW DG 4mmLoE-366-12Ar-4mmClr | 2.7 | 0.25 | 0.24 | 0.26 |

# Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 2830 | n/a | 60 | N | No |
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 2830 | n/a | 60 | N | No |
| Kitchen/Living | AWS-089-62 A | n/a | 2650 | 3500 | n/a | 60 | E | No |
| Kitchen/Living | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | E | No |
| Kitchen/Living | AWS-071-33 A | n/a | 2650 | 2200 | n/a | 00 | W | Yes |
| Kitchen/Living | ALM-003-01 A | n/a | 555 | 1400 | n/a | 00 | N | No Shading |
| Bath | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Bath | VAN-004-08 A | n/a | 500 | 2800 | n/a | 90 | N | No |
| Bedroom 2 | AWS-071-33 A | n/a | 2650 | 1590 | n/a | 00 | W | Yes |
| Bedroom 2 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Bedroom 2 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | Yes |
| Bedroom 1 | VAN-004-08 A | n/a | 2650 | 600 | n/a | 90 | W | No |
| Bedroom 1 | AWS-071-33 A | n/a | 2650 | 1590 | n/a | 00 | W | Yes |
| Entry | AWS-071-33 A | n/a | 2650 | 2200 | n/a | 00 | W | Yes |

# 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 |
|---|---|
| GEN-04-006a | Single-glazed clear, Timber and Aluminium Frame |

* Refer to glossary.

## Skylight *schedule*

| Location | Skylight ID | Skylight No. | Skylight shaft length (mm) | Area ($m^2$) | Orientation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| Kitchen/Living | GEN-04-006a | n/a | 50 | 0.80 | N | None | No | 0.50 |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| No Data Available | | | | |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| EW-1 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + Bulk Insulation R2.5 | No |
| EW-2 | AAC cavity panel on battens | 0.30 | Light | Foil, Anti-glare one side + Bulk Insulation R1.5 | No |
| EW-3 | Fibro Cavity Panel Direct Fix | 0.30 | Light | Foil, Anti-glare one side + 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) |
|---|---|---|---|---|---|---|
| Kitchen/Living | EW-1 | 2700 | 5722 | N | 870 | NO |
| Kitchen/Living | EW-1 | 2700 | 5400 | E | 1517 | NO |
| Kitchen/Living | EW-1 | 2700 | 2390 | W | 700 | YES |
| Bath | EW-2 | 2700 | 400 | S | 5700 | YES |
| Bath | EW-1 | 2700 | 1800 | W | 300 | NO |
| Bath | EW-1 | 2700 | 4193 | N | 821 | NO |
| Bedroom 2 | EW-1 | 2700 | 3300 | W | 500 | NO |
| Bedroom 2 | EW-2 | 2700 | 200 | N | 4967 | YES |
| Bedroom 1 | EW-3 | 2700 | 200 | N | 2200 | YES |
| Bedroom 1 | EW-3 | 2700 | 3300 | W | 0 | NO |
| Entry | EW-3 | 2700 | 2195 | W | 200 | YES |

## Internal wall *type*

| Wall ID | Wall type | Area ($m^2$) | Bulk insulation |
|---|---|---|---|
| IW-1 - Concrete Panel/Blocks filled, plasterboard | | 64.00 | No Insulation |
| IW-2 - Cavity wall, direct fix plasterboard, single gap | | 42.00 | No insulation |
| IW-3 - Cavity wall, direct fix plasterboard, single gap | | 11.00 | Bulk Insulation, No Air Gap R1.5 |

* Refer to glossary.

## Floor *type*

| Location | Construction | Area ($m^2$) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Kitchen/Living /Bedroom 1 | Concrete Above Plasterboard 150mm | 3.60 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living /Entry | Concrete Above Plasterboard 150mm | 6.80 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living /WC | Concrete Above Plasterboard 150mm | 2.40 | | No Insulation | Cork Tiles or Parquetry 8mm |
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 31.20 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| Bath | Concrete Slab, Unit Below 150mm | 5.30 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2/Bedroom 1 | Concrete Above Plasterboard 150mm | 10.60 | | No Insulation | Carpet+Rubber Underlay 18mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 14.30 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Entry | Concrete Slab, Unit Below 150mm | 6.50 | None | No Insulation | Cork Tiles or Parquetry 8mm |
| WC | Concrete Slab, Unit Below 150mm | 2.10 | None | No Insulation | Ceramic Tiles 8mm |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Kitchen/Living | Plasterboard | Bulk Insulation R3.5 | No |
| Bath | Plasterboard | Bulk Insulation R3.5 | No |
| Bedroom 2 | Plasterboard | Bulk Insulation R3.5 | No |
| Bedroom 1 | Concrete Above Plasterboard | No Insulation | No |
| Entry | Concrete Above Plasterboard | No Insulation | No |
| WC | Concrete Above Plasterboard | No Insulation | No |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter ($mm^2$) | Sealed/unsealed |
|---|---|---|---|---|
| Kitchen/Living | 12 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 2 | Exhaust Fans | 300 | Sealed |
| Bath | 2 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 2 | Downlights - LED | 150 | Sealed |
| Entry | 1 | Downlights - Halogen | 450 | Sealed |
| WC | 1 | Downlights - LED | 450 | Sealed |
| WC | 1 | Exhaust Fans | 300 | Sealed |

## Ceiling *fans*

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Kitchen/Living | 1 | 1200 |

* Refer to glossary.

| Location | Quantity | Diameter (mm) |
|---|---|---|
| Bedroom 2 | 1 | 1200 |
| Bedroom 1 | 1 | 1200 |

## **Roof** *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Corrugated Iron | Bulk, Reflective Side Down, No Air Gap Above R1.3 | 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). |