# Nationwide House Energy Rating Scheme — Class 2 summary

**Generated on 5 Feb 2021 using FirstRate5 v5.3.0a**

## Property

**Address** 2 Kulgun Court, OCEAN SHORES, NSW, 2483

**Lot/DP**

**NatHERS climate zone**

## Accredited assessor

Duncan Hope

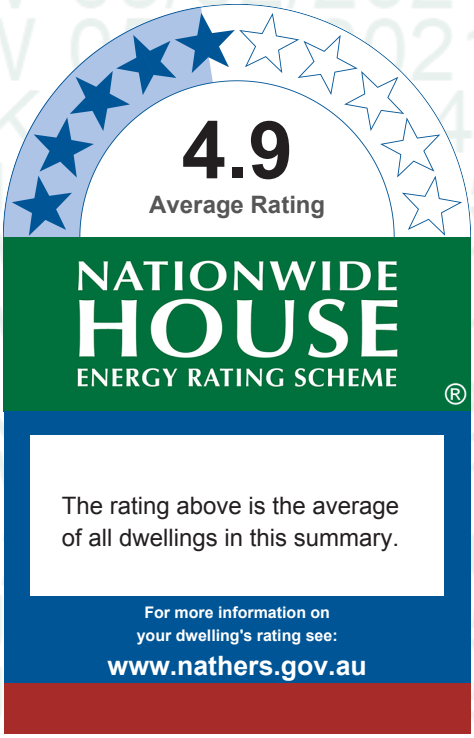
Senica Consultancy Group

duncan@senica.com.au

61280067784

**Accreditation No.** DMN/14/1658

**Assessor Accrediting Organisation** DMN




## Verification

**To verify this certificate, scan the QR code or visit** https://www.fr5.com.au/QRCodeLanding?PublicId=ZSWKKA9QXM&GrpCert=1 When using either link, ensure you are visiting www.fr5.com.au.

## Summary of all dwellings

| Certificate number and link | Unit number | Heating load (MJ/m²/p.a.) | Cooling load (MJ/m²/p.a.) | Total load (MJ/m²/p.a.) | Star rating |
|---|---|---|---|---|---|
| 53SM20ARZM | 09 | 18.2 | 39.2 | 57.4 | 4.8 |
| EGWTZOXZD6 | 10 | 18.7 | 38.3 | 57 | 4.9 |
| 2EAALA21PS | 11 | 18.5 | 38.4 | 56.9 | 4.9 |
| 8P00MUHFP0 | 12 | 18.7 | 38.3 | 57 | 4.9 |
| INQLERRMGC | 13 | 18.7 | 38.1 | 56.8 | 4.9 |
| FM6AV12RA2 | 14 | 19 | 38 | 57 | 4.9 |
| 7JBHOYQ6HF | 15 | 19 | 38 | 57 | 4.9 |

*Continued over*

### 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.

## Summary of and links to all dwellings (continued)

| Certificate number and link | Unit number | Heating load (MJ/m²/p.a.) | Cooling load (MJ/m²/p.a.) | Total load (MJ/m²/p.a.) | Star rating |
|---|---|---|---|---|---|
| HRKMXOXZ54 | 16 | 19 | 38 | 57 | 4.9 |
| Average | | 18.7 | 38.3 | 57 | 4.9 |

# Explanatory notes

**About this report**

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the 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. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

**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). 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.

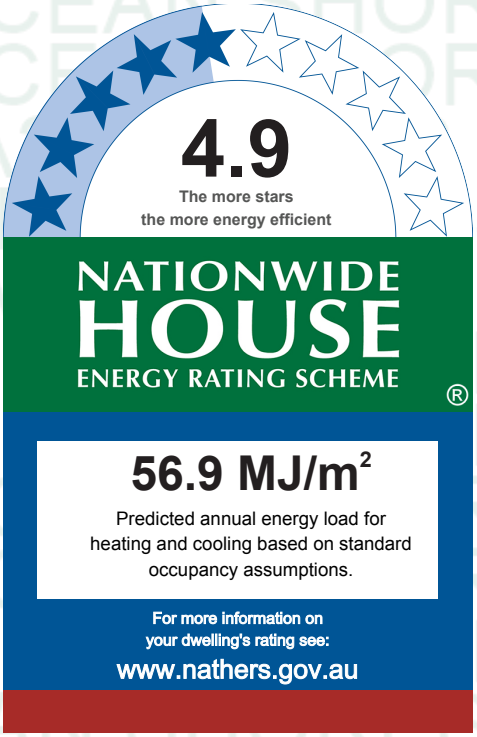
Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

**Disclaimer**

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. 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.

# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 2EAALA21PS

**Generated on 5 Feb 2021 using FirstRate5: 5.3.0a (3.21)**




## Property

| | |
|---|---|
| **Address** | 11, 2 Kulgun Court, OCEAN SHORES, NSW, 2483 |
| **Lot/DP** | 9//SP102058 |
| **NCC Class*** | Class 1a |
| **Type** | New Home |

## Plans

| | |
|---|---|
| **Main plan** | Project No. 20017 |
| **Prepared by** | Story Design Collective |

## Construction and environment

| **Assessed floor area (m²)*** | | **Exposure type** |
|---|---|---|
| Conditioned* | 97.4 | suburban |
| Unconditioned* | 5.4 | **NatHERS climate zone** |
| Total | 102.8 | 10, OCEAN SHORES |
| Garage | - | |

## Thermal performance

| Heating | Cooling |
|---|---|
| **18.5** MJ/m² | **38.4** MJ/m² |

**About the rating**

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

## Accredited assessor

| | |
|---|---|
| **Name** | Duncan Hope |
| **Business name** | Senica Consultancy Group |
| **Email** | duncan@senica.com.au |
| **Phone** | 61280067784 |
| **Accreditation No.** | DMN/14/1658 |
| **Assessor Accrediting Organisation** | DMN |
| **Declaration of interest** | Declaration completed: no conflicts |

## Verification

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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

Due to limitations with the window library, windows have been used in a generic manner. Please ignore the brand/make and refer to the U-Value and SHGC requirements.

If downlights are used in construction, they should be Insulation Continuous rated so that insulation may be laid over the downlights with no requirement for holes in the insulation.

## Window and glazed door *type and performance*

### Default* windows

| | | | | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| **Window ID** | **Window description** | **Maximum U-value*** | **SHGC*** | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | Aluminium B SG Clear | 6.7 | 0.7 | 0.66 | 0.74 |

### Custom* windows

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

## Window and glazed door *Schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Bedroom 1 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | ESE | No |
| Bedroom 1 | ALM-002-01 A | 2108dh | 2100 | 800 | double_hung | 45.0 | NNE | No |

* Refer to glossary.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bedroom 2 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bedroom 3 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bath | ALM-002-01 A | 0615s | 600 | 1500 | sliding | 45.0 | SSW | No |
| Living | ALM-002-01 A | 2424sd | 2400 | 2400 | sliding | 45.0 | WNW | No |
| Kitchen/Living | ALM-002-01 A | Opening 68 | 900 | 2400 | sliding | 45.0 | NNE | No |
| Kitchen/Living | ALM-002-01 A | 2434sd | 2400 | 3400 | sliding | 66.0 | ESE | No |
| Ensuite | ALM-002-01 A | 1206s | 1200 | 600 | sliding | 45.0 | SSW | No |

## Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Area (m²) | 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 (m²) | Orient-ation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Living | 2300 | 920 | 100.0 | WNW |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | Weatherboard - 90mm Weatherboard with R2.0 | 0.5 | Medium | Glass fibre batt: R2.0 (R2.0) | No |
| 2 | Ret Walls - Conc. Block 190mm Retaining Walls w/ p'board | 0.5 | Medium | | No |

* Refer to glossary.

## External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 1 | 1 | 2550 | 3775 | ESE | 0 | No |
| Bedroom 1 | 1 | 2550 | 3594 | NNE | 4217 | Yes |
| Bedroom 1 | 1 | 2550 | 3594 | SSW | 0 | No |
| Bedroom 2 | 2 | 1450 | 3170 | WNW | 0 | No |
| Bedroom 2 | 1 | 1100 | 3170 | WNW | 6072 | Yes |
| Bedroom 2 | 1 | 2550 | 3498 | SSW | 0 | No |
| Bedroom 3 | 1 | 2550 | 2988 | SSW | 0 | No |
| Bath | 1 | 2550 | 2739 | SSW | 0 | No |
| Living | 1 | 2700 | 105 | NNE | 0 | Yes |
| Living | 1 | 2700 | 780 | ESE | 0 | Yes |
| Living | 1 | 2700 | 3903 | NNE | 0 | No |
| Living | 1 | 2700 | 4743 | WNW | 1625 | Yes |
| Kitchen/Living | 1 | 2700 | 4490 | NNE | 0 | No |
| Kitchen/Living | 1 | 2700 | 780 | WNW | 0 | No |
| Kitchen/Living | 1 | 2700 | 3134 | NNE | 0 | Yes |
| Kitchen/Living | 1 | 2700 | 4163 | ESE | 3973 | Yes |
| WIR | 1 | 2550 | 320 | NNE | 0 | Yes |
| Ensuite | 1 | 2550 | 2494 | SSW | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|---|---|---|
| 1 | FR5 - Internal Plasterboard Stud Wall | 90.9 | |

## Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Bedroom 1 | FR5 - Timber Lined | 13.6 | Open | R0.0 | Carpet |
| Bedroom 2 | FR5 - Timber Lined | 10.4 | Open | R0.0 | Carpet |
| Bedroom 3 | FR5 - Timber Lined | 10.6 | Open | R0.0 | Carpet |
| Laundry Hallway | FR5 - Timber Lined | 5 | Open | R0.0 | Timber |
| Bath | FR5 - Timber Lined | 5.4 | Open | R0.0 | Tiles |
| Living | FR5 - Timber Lined | 18.9 | Open | R0.0 | Timber |
| Kitchen/Living | FR5 - Timber Lined | 29.9 | Open | R0.0 | Timber |
| WIR | FR5 - Timber Lined | 3.9 | Open | R0.0 | Carpet |
| Ensuite | FR5 - Timber Lined | 5.2 | Open | R0.0 | Tiles |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|

* Refer to glossary.

| | | | |
|---|---|---|---|
| Bedroom 1 | Plasterboard | R3.0 | Yes |
| Bedroom 2 | Plasterboard | R3.0 | Yes |
| Bedroom 3 | Plasterboard | R3.0 | Yes |
| Laundry Hallway | Plasterboard | R3.0 | Yes |
| Bath | Plasterboard | R3.0 | Yes |
| Living | Plasterboard | R3.0 | Yes |
| Kitchen/Living | Plasterboard | R3.0 | Yes |
| WIR | Plasterboard | R3.0 | Yes |
| Ensuite | Plasterboard | R3.0 | Yes |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|---|---|---|---|---|
| No Data Available | | | | |

## Ceiling *fans*

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

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Cont:Attic-Continuous | 1.3 | 0.5 | Medium |

* 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.

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## Disclaimer

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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). |

# Nationwide House Energy Rating Scheme
# NatHERS Certificate No. 7JBHOYQ6HF

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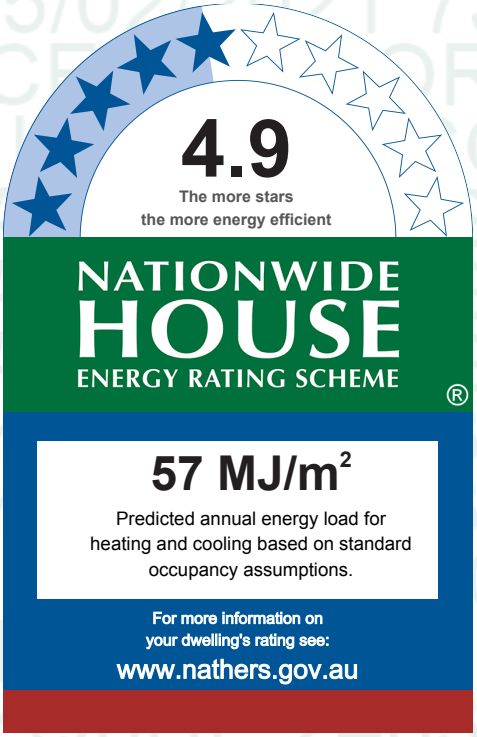


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| **NCC Class*** | Class 1a |
| **Type** | New Home |

## Plans

| | |
|---|---|
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| **Prepared by** | Story Design Collective |

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| **Assessed floor area (m²)*** | | **Exposure type** |
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| Conditioned* | 97.4 | suburban |
| Unconditioned* | 5.4 | **NatHERS climate zone** |
| Total | 102.8 | 10, OCEAN SHORES |
| Garage | - | |

## Thermal performance

| Heating | Cooling |
|---|---|
| 19 MJ/m² | 38 MJ/m² |

**About the rating**

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## Accredited assessor

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| **Business name** | Senica Consultancy Group |
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### 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.

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

## Additional Notes

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## Window and glazed door *type and performance*

### Default* windows

| | | | | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| **Window ID** | **Window description** | **Maximum U-value*** | **SHGC*** | SHGC lower limit | SHGC upper limit |
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### Custom* windows

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

## Window and glazed door *Schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Bedroom 1 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | ESE | No |
| Bedroom 1 | ALM-002-01 A | 2108dh | 2100 | 800 | double_hung | 45.0 | NNE | No |

* Refer to glossary.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bedroom 2 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bedroom 3 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bath | ALM-002-01 A | 0615s | 600 | 1500 | sliding | 45.0 | SSW | No |
| Living | ALM-002-01 A | 2424sd | 2400 | 2400 | sliding | 45.0 | WNW | No |
| Kitchen/Living | ALM-002-01 A | Opening 68 | 900 | 2400 | sliding | 45.0 | NNE | No |
| Kitchen/Living | ALM-002-01 A | 2434sd | 2400 | 3400 | sliding | 66.0 | ESE | No |
| Ensuite | ALM-002-01 A | 1206s | 1200 | 600 | sliding | 45.0 | SSW | No |

## Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Area (m²) | 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 (m²) | Orient-ation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Living | 2300 | 920 | 100.0 | WNW |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | Weatherboard - 90mm Weatherboard with R2.0 | 0.5 | Medium | Glass fibre batt: R2.0 (R2.0) | No |

## External wall *schedule*

* Refer to glossary.

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 1 | 1 | 2550 | 3775 | ESE | 0 | No |
| Bedroom 1 | 1 | 2550 | 3594 | NNE | 4217 | Yes |
| Bedroom 1 | 1 | 2550 | 3594 | SSW | 0 | No |
| Bedroom 2 | 1 | 2550 | 3170 | WNW | 6072 | Yes |
| Bedroom 2 | 1 | 2550 | 3498 | SSW | 0 | No |
| Bedroom 3 | 1 | 2550 | 2988 | SSW | 0 | No |
| Bath | 1 | 2550 | 2739 | SSW | 0 | No |
| Living | 1 | 2700 | 105 | NNE | 0 | Yes |
| Living | 1 | 2700 | 780 | ESE | 0 | Yes |
| Living | 1 | 2700 | 3903 | NNE | 0 | No |
| Living | 1 | 2700 | 4743 | WNW | 1625 | Yes |
| Kitchen/Living | 1 | 2700 | 4490 | NNE | 0 | No |
| Kitchen/Living | 1 | 2700 | 780 | WNW | 0 | No |
| Kitchen/Living | 1 | 2700 | 3134 | NNE | 0 | Yes |
| Kitchen/Living | 1 | 2700 | 4163 | ESE | 3973 | Yes |
| WIR | 1 | 2550 | 320 | NNE | 0 | Yes |
| Ensuite | 1 | 2550 | 2494 | SSW | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|---|---|---|
| 1 | FR5 - Internal Plasterboard Stud Wall | 90.9 | |

## Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Bedroom 1 | FR5 - Timber Lined | 13.6 | Open | R0.0 | Carpet |
| Bedroom 2 | FR5 - Timber Lined | 10.4 | Open | R0.0 | Carpet |
| Bedroom 3 | FR5 - Timber Lined | 10.6 | Open | R0.0 | Carpet |
| Laundry Hallway | FR5 - Timber Lined | 5 | Open | R0.0 | Timber |
| Bath | FR5 - Timber Lined | 5.4 | Open | R0.0 | Tiles |
| Living | FR5 - Timber Lined | 18.9 | Open | R0.0 | Timber |
| Kitchen/Living | FR5 - Timber Lined | 29.9 | Open | R0.0 | Timber |
| WIR | FR5 - Timber Lined | 3.9 | Open | R0.0 | Carpet |
| Ensuite | FR5 - Timber Lined | 5.2 | Open | R0.0 | Tiles |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Bedroom 1 | Plasterboard | R3.0 | Yes |
| Bedroom 2 | Plasterboard | R3.0 | Yes |

* Refer to glossary.

| | | | | |
|---|---|---|---|---|
| Bedroom 3 | Plasterboard | | R3.0 | Yes |
| Laundry Hallway | Plasterboard | | R3.0 | Yes |
| Bath | Plasterboard | | R3.0 | Yes |
| Living | Plasterboard | | R3.0 | Yes |
| Kitchen/Living | Plasterboard | | R3.0 | Yes |
| WIR | Plasterboard | | R3.0 | Yes |
| Ensuite | Plasterboard | | R3.0 | Yes |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|---|---|---|---|---|
| No Data Available | | | | |

## Ceiling *fans*

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

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Cont:Attic-Continuous | 1.3 | 0.5 | Medium |

* 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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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.

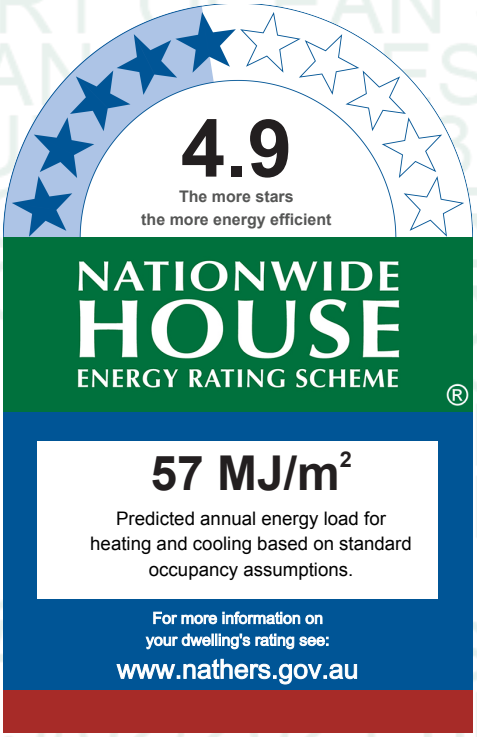
# Glossary

| | |
|---|---|
| **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. 8P00MUHFP0

**Generated on 5 Feb 2021 using FirstRate5: 5.3.0a (3.21)**




## Property

| | |
|---|---|
| **Address** | 12, 2 Kulgun Court, OCEAN SHORES, NSW, 2483 |
| **Lot/DP** | 9//102058 |
| **NCC Class*** | Class 1a |
| **Type** | New Home |

## Plans

| | |
|---|---|
| **Main plan** | Project No. 20017 |
| **Prepared by** | Story Design Collective |

## Construction and environment

| **Assessed floor area (m²)*** | |
|---|---|
| Conditioned* | 97.4 |
| Unconditioned* | 5.4 |
| Total | 102.8 |
| Garage | - |

**Exposure type**
suburban

**NatHERS climate zone**
10, OCEAN SHORES

## Thermal performance

| Heating | Cooling |
|---|---|
| **18.7** MJ/m² | **38.3** MJ/m² |

**About the rating**

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

## Accredited assessor

| | |
|---|---|
| **Name** | Duncan Hope |
| **Business name** | Senica Consultancy Group |
| **Email** | duncan@senica.com.au |
| **Phone** | 61280067784 |
| **Accreditation No.** | DMN/14/1658 |
| **Assessor Accrediting Organisation** | DMN |
| **Declaration of interest** | Declaration completed: no conflicts |

## Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=8P00MUHFP0 When using either link, ensure you are visiting www.FR5.com.au.

**National Construction Code (NCC) requirements**

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

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

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

## Certificate Check

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

### Genuine certificate

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

### Ceiling penetrations*

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

### Windows

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

### Apartment entrance doors

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

### Exposure*

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

### Provisional* values

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

## Additional Notes

Due to limitations with the window library, windows have been used in a generic manner. Please ignore the brand/make and refer to the U-Value and SHGC requirements.

If downlights are used in construction, they should be Insulation Continuous rated so that insulation may be laid over the downlights with no requirement for holes in the insulation.

## Window and glazed door *type and performance*

### Default* windows

| | | | | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| **Window ID** | **Window description** | **Maximum U-value*** | **SHGC*** | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | Aluminium B SG Clear | 6.7 | 0.7 | 0.66 | 0.74 |

### Custom* windows

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

## Window and glazed door *Schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Bedroom 1 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | ESE | No |
| Bedroom 1 | ALM-002-01 A | 2108dh | 2100 | 800 | double_hung | 45.0 | NNE | No |

* Refer to glossary.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bedroom 2 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bedroom 3 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bath | ALM-002-01 A | 0615s | 600 | 1500 | sliding | 45.0 | SSW | No |
| Living | ALM-002-01 A | 2424sd | 2400 | 2400 | sliding | 45.0 | WNW | No |
| Kitchen/Living | ALM-002-01 A | Opening 68 | 900 | 2400 | sliding | 45.0 | NNE | No |
| Kitchen/Living | ALM-002-01 A | 2434sd | 2400 | 3400 | sliding | 66.0 | ESE | No |
| Ensuite | ALM-002-01 A | 1206s | 1200 | 600 | sliding | 45.0 | SSW | No |

## Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Area (m²) | 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 (m²) | Orient-ation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Living | 2300 | 920 | 100.0 | WNW |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | Weatherboard - 90mm Weatherboard with R2.0 | 0.5 | Medium | Glass fibre batt: R2.0 (R2.0) | No |
| 2 | Ret Walls - Conc. Block 190mm Retaining Walls w/ p'board | 0.5 | Medium | | No |

* Refer to glossary.

## External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 1 | 1 | 2550 | 3775 | ESE | 0 | No |
| Bedroom 1 | 1 | 2550 | 3594 | NNE | 4217 | Yes |
| Bedroom 1 | 1 | 2550 | 3594 | SSW | 0 | No |
| Bedroom 2 | 2 | 800 | 3170 | WNW | 0 | No |
| Bedroom 2 | 1 | 1750 | 3170 | WNW | 6072 | Yes |
| Bedroom 2 | 1 | 2550 | 3498 | SSW | 0 | No |
| Bedroom 3 | 1 | 2550 | 2988 | SSW | 0 | No |
| Bath | 1 | 2550 | 2739 | SSW | 0 | No |
| Living | 1 | 2700 | 105 | NNE | 0 | Yes |
| Living | 1 | 2700 | 780 | ESE | 0 | Yes |
| Living | 1 | 2700 | 3903 | NNE | 0 | No |
| Living | 1 | 2700 | 4743 | WNW | 1625 | Yes |
| Kitchen/Living | 1 | 2700 | 4490 | NNE | 0 | No |
| Kitchen/Living | 1 | 2700 | 780 | WNW | 0 | No |
| Kitchen/Living | 1 | 2700 | 3134 | NNE | 0 | Yes |
| Kitchen/Living | 1 | 2700 | 4163 | ESE | 3973 | Yes |
| WIR | 1 | 2550 | 320 | NNE | 0 | Yes |
| Ensuite | 1 | 2550 | 2494 | SSW | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|---|---|---|
| 1 | FR5 - Internal Plasterboard Stud Wall | 90.9 | |

## Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Bedroom 1 | FR5 - Timber Lined | 13.6 | Open | R0.0 | Carpet |
| Bedroom 2 | FR5 - Timber Lined | 10.4 | Open | R0.0 | Carpet |
| Bedroom 3 | FR5 - Timber Lined | 10.6 | Open | R0.0 | Carpet |
| Laundry Hallway | FR5 - Timber Lined | 5 | Open | R0.0 | Timber |
| Bath | FR5 - Timber Lined | 5.4 | Open | R0.0 | Tiles |
| Living | FR5 - Timber Lined | 18.9 | Open | R0.0 | Timber |
| Kitchen/Living | FR5 - Timber Lined | 29.9 | Open | R0.0 | Timber |
| WIR | FR5 - Timber Lined | 3.9 | Open | R0.0 | Carpet |
| Ensuite | FR5 - Timber Lined | 5.2 | Open | R0.0 | Tiles |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|

* Refer to glossary.

| | | | |
|---|---|---|---|
| Bedroom 1 | Plasterboard | R3.0 | Yes |
| Bedroom 2 | Plasterboard | R3.0 | Yes |
| Bedroom 3 | Plasterboard | R3.0 | Yes |
| Laundry Hallway | Plasterboard | R3.0 | Yes |
| Bath | Plasterboard | R3.0 | Yes |
| Living | Plasterboard | R3.0 | Yes |
| Kitchen/Living | Plasterboard | R3.0 | Yes |
| WIR | Plasterboard | R3.0 | Yes |
| Ensuite | Plasterboard | R3.0 | Yes |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|---|---|---|---|---|
| No Data Available | | | | |

## Ceiling *fans*

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

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Cont:Attic-Continuous | 1.3 | 0.5 | Medium |

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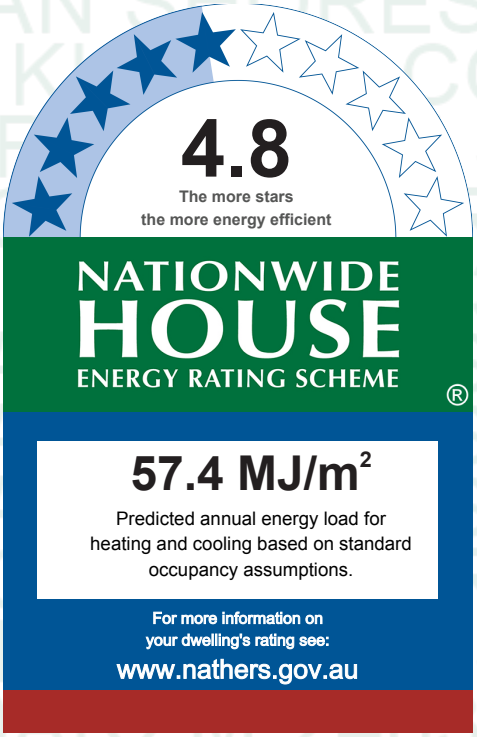
| | |
|---|---|
| **Annual energy load** | the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions. |
| **Assessed floor area** | the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the 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. 53SM20ARZM

**Generated on 5 Feb 2021 using FirstRate5: 5.3.0a (3.21)**




## Property

| | |
|---|---|
| **Address** | 09, 2 Kulgun Court, OCEAN SHORES, NSW, 2483 |
| **Lot/DP** | 9//SP102058 |
| **NCC Class*** | Class 1a |
| **Type** | New Home |

## Plans

| | |
|---|---|
| **Main plan** | Project No. 20017 |
| **Prepared by** | Story Design Collective |

## Construction and environment

| **Assessed floor area (m²)*** | | **Exposure type** |
|---|---|---|
| Conditioned* | 97.4 | suburban |
| Unconditioned* | 5.4 | **NatHERS climate zone** |
| Total | 102.8 | 10, OCEAN SHORES |
| Garage | - | |

## Thermal performance

| Heating | Cooling |
|---|---|
| 18.2 MJ/m² | 39.2 MJ/m² |

**About the rating**

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

## Accredited assessor

| | |
|---|---|
| **Name** | Duncan Hope |
| **Business name** | Senica Consultancy Group |
| **Email** | duncan@senica.com.au |
| **Phone** | 61280067784 |
| **Accreditation No.** | DMN/14/1658 |
| **Assessor Accrediting Organisation** | DMN |
| **Declaration of interest** | Declaration completed: no conflicts |

## Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=53SM20ARZM When using either link, ensure you are visiting www.FR5.com.au.

**National Construction Code (NCC) requirements**

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

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

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

## Certificate Check

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

### Genuine certificate

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

### Ceiling penetrations*

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

### Windows

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

### Apartment entrance doors

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

### Exposure*

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

### Provisional* values

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

## Additional Notes

Due to limitations with the window library, windows have been used in a generic manner. Please ignore the brand/make and refer to the U-Value and SHGC requirements.

If downlights are used in construction, they should be Insulation Continuous rated so that insulation may be laid over the downlights with no requirement for holes in the insulation.

## Window and glazed door *type and performance*

### Default* windows

| | | | | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| **Window ID** | **Window description** | **Maximum U-value*** | **SHGC*** | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | Aluminium B SG Clear | 6.7 | 0.7 | 0.66 | 0.74 |

### Custom* windows

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

## Window and glazed door *Schedule*

| **Location** | **Window ID** | **Window no.** | **Height (mm)** | **Width (mm)** | **Window type** | **Opening %** | **Orientation** | **Window shading device*** |
|---|---|---|---|---|---|---|---|---|
| Bedroom 1 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | ESE | No |
| Bedroom 1 | ALM-002-01 A | 2108dh | 2100 | 800 | double_hung | 45.0 | NNE | No |

* Refer to glossary.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bedroom 2 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bedroom 3 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bath | ALM-002-01 A | 0615s | 600 | 1500 | sliding | 45.0 | SSW | No |
| Living | ALM-002-01 A | 2424sd | 2400 | 2400 | sliding | 45.0 | WNW | No |
| Kitchen/Living | ALM-002-01 A | Opening 68 | 900 | 2400 | sliding | 45.0 | NNE | No |
| Kitchen/Living | ALM-002-01 A | 2434sd | 2400 | 3400 | sliding | 66.0 | ESE | No |
| Ensuite | ALM-002-01 A | 1206s | 1200 | 600 | sliding | 45.0 | SSW | No |

## Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Area (m²) | 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 (m²) | Orient-ation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Living | 2300 | 920 | 100.0 | WNW |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | Weatherboard - 90mm Weatherboard with R2.0 | 0.5 | Medium | Glass fibre batt: R2.0 (R2.0) | No |
| 2 | Ret Walls - Conc. Block 190mm Retaining Walls w/ p'board | 0.5 | Medium | | No |

* Refer to glossary.

## External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 1 | 1 | 2550 | 3775 | ESE | 0 | No |
| Bedroom 1 | 1 | 2550 | 3594 | NNE | 4217 | Yes |
| Bedroom 1 | 1 | 2550 | 3594 | SSW | 0 | No |
| Bedroom 2 | 2 | 800 | 3170 | WNW | 0 | No |
| Bedroom 2 | 1 | 1750 | 3170 | WNW | 6072 | Yes |
| Bedroom 2 | 1 | 2550 | 3498 | SSW | 0 | No |
| Bedroom 3 | 1 | 2550 | 2988 | SSW | 0 | No |
| Bath | 1 | 2550 | 2739 | SSW | 0 | No |
| Living | 1 | 2700 | 105 | NNE | 0 | Yes |
| Living | 1 | 2700 | 780 | ESE | 0 | Yes |
| Living | 1 | 2700 | 3903 | NNE | 0 | No |
| Living | 1 | 2700 | 4743 | WNW | 1625 | Yes |
| Kitchen/Living | 1 | 2700 | 4490 | NNE | 0 | No |
| Kitchen/Living | 1 | 2700 | 780 | WNW | 0 | No |
| Kitchen/Living | 1 | 2700 | 3134 | NNE | 0 | Yes |
| Kitchen/Living | 1 | 2700 | 4163 | ESE | 3973 | Yes |
| WIR | 1 | 2550 | 320 | NNE | 0 | Yes |
| Ensuite | 1 | 2550 | 2494 | SSW | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|---|---|---|
| 1 | FR5 - Internal Plasterboard Stud Wall | 90.9 | |

## Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Bedroom 1 | FR5 - Timber Lined | 13.6 | Open | R0.0 | Carpet |
| Bedroom 2 | FR5 - Timber Lined | 10.4 | Open | R0.0 | Carpet |
| Bedroom 3 | FR5 - Timber Lined | 10.6 | Open | R0.0 | Carpet |
| Laundry Hallway | FR5 - Timber Lined | 5 | Open | R0.0 | Timber |
| Bath | FR5 - Timber Lined | 5.4 | Open | R0.0 | Tiles |
| Living | FR5 - Timber Lined | 18.9 | Open | R0.0 | Timber |
| Kitchen/Living | FR5 - Timber Lined | 29.9 | Open | R0.0 | Timber |
| WIR | FR5 - Timber Lined | 3.9 | Open | R0.0 | Carpet |
| Ensuite | FR5 - Timber Lined | 5.2 | Open | R0.0 | Tiles |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|

* Refer to glossary.

| | | | |
|---|---|---|---|
| Bedroom 1 | Plasterboard | R3.0 | Yes |
| Bedroom 2 | Plasterboard | R3.0 | Yes |
| Bedroom 3 | Plasterboard | R3.0 | Yes |
| Laundry Hallway | Plasterboard | R3.0 | Yes |
| Bath | Plasterboard | R3.0 | Yes |
| Living | Plasterboard | R3.0 | Yes |
| Kitchen/Living | Plasterboard | R3.0 | Yes |
| WIR | Plasterboard | R3.0 | Yes |
| Ensuite | Plasterboard | R3.0 | Yes |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|---|---|---|---|---|
| No Data Available | | | | |

## Ceiling *fans*

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

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Cont:Attic-Continuous | 1.3 | 0.5 | Medium |

* 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.

## Disclaimer

The format of the NatHERS Certificate was developed by the NatHERSAdministrator. 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.

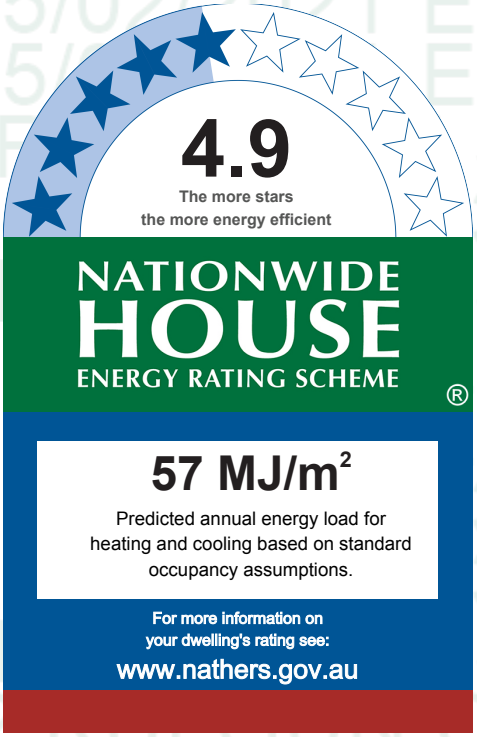
# Glossary

| | |
|---|---|
| **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. EGWTZOXZD6

**Generated on 5 Feb 2021 using FirstRate5: 5.3.0a (3.21)**




## Property

| | |
|---|---|
| **Address** | 10, 2 Kulgun Court, OCEAN SHORES, NSW, 2483 |
| **Lot/DP** | 9//SP102058 |
| **NCC Class*** | Class 1a |
| **Type** | New Home |

## Plans

| | |
|---|---|
| **Main plan** | Project No. 20017 |
| **Prepared by** | Story Design Collective |

## Construction and environment

| **Assessed floor area (m²)*** | | **Exposure type** |
|---|---|---|
| Conditioned* | 97.4 | suburban |
| Unconditioned* | 5.4 | **NatHERS climate zone** |
| Total | 102.8 | 10, OCEAN SHORES |
| Garage | - | |

## Thermal performance

| Heating | Cooling |
|---|---|
| **18.7** MJ/m² | **38.3** MJ/m² |

**About the rating**

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

## Accredited assessor

| | |
|---|---|
| **Name** | Duncan Hope |
| **Business name** | Senica Consultancy Group |
| **Email** | duncan@senica.com.au |
| **Phone** | 61280067784 |
| **Accreditation No.** | DMN/14/1658 |
| **Assessor Accrediting Organisation** | DMN |
| **Declaration of interest** | Declaration completed: no conflicts |

## Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=EGWTZOXZD6 When using either link, ensure you are visiting www.FR5.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

Due to limitations with the window library, windows have been used in a generic manner. Please ignore the brand/make and refer to the U-Value and SHGC requirements.

If downlights are used in construction, they should be Insulation Continuous rated so that insulation may be laid over the downlights with no requirement for holes in the insulation.

## Window and glazed door *type and performance*

### Default* windows

| | | | | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| **Window ID** | **Window description** | **Maximum U-value*** | **SHGC*** | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | Aluminium B SG Clear | 6.7 | 0.7 | 0.66 | 0.74 |

### Custom* windows

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

## Window and glazed door *Schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Bedroom 1 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | ESE | No |
| Bedroom 1 | ALM-002-01 A | 2108dh | 2100 | 800 | double_hung | 45.0 | NNE | No |

* Refer to glossary.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bedroom 2 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bedroom 3 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bath | ALM-002-01 A | 0615s | 600 | 1500 | sliding | 45.0 | SSW | No |
| Living | ALM-002-01 A | 2424sd | 2400 | 2400 | sliding | 45.0 | WNW | No |
| Kitchen/Living | ALM-002-01 A | Opening 68 | 900 | 2400 | sliding | 45.0 | NNE | No |
| Kitchen/Living | ALM-002-01 A | 2434sd | 2400 | 3400 | sliding | 66.0 | ESE | No |
| Ensuite | ALM-002-01 A | 1206s | 1200 | 600 | sliding | 45.0 | SSW | No |

## Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Area (m²) | 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 (m²) | Orient-ation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Living | 2300 | 920 | 100.0 | WNW |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | Weatherboard - 90mm Weatherboard with R2.0 | 0.5 | Medium | Glass fibre batt: R2.0 (R2.0) | No |
| 2 | Ret Walls - Conc. Block 190mm Retaining Walls w/ p'board | 0.5 | Medium | | No |

* Refer to glossary.

## External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 1 | 1 | 2550 | 3775 | ESE | 0 | No |
| Bedroom 1 | 1 | 2550 | 3594 | NNE | 4217 | Yes |
| Bedroom 1 | 1 | 2550 | 3594 | SSW | 0 | No |
| Bedroom 2 | 2 | 800 | 3170 | WNW | 0 | No |
| Bedroom 2 | 1 | 1750 | 3170 | WNW | 6072 | Yes |
| Bedroom 2 | 1 | 2550 | 3498 | SSW | 0 | No |
| Bedroom 3 | 1 | 2550 | 2988 | SSW | 0 | No |
| Bath | 1 | 2550 | 2739 | SSW | 0 | No |
| Living | 1 | 2700 | 105 | NNE | 0 | Yes |
| Living | 1 | 2700 | 780 | ESE | 0 | Yes |
| Living | 1 | 2700 | 3903 | NNE | 0 | No |
| Living | 1 | 2700 | 4743 | WNW | 1625 | Yes |
| Kitchen/Living | 1 | 2700 | 4490 | NNE | 0 | No |
| Kitchen/Living | 1 | 2700 | 780 | WNW | 0 | No |
| Kitchen/Living | 1 | 2700 | 3134 | NNE | 0 | Yes |
| Kitchen/Living | 1 | 2700 | 4163 | ESE | 3973 | Yes |
| WIR | 1 | 2550 | 320 | NNE | 0 | Yes |
| Ensuite | 1 | 2550 | 2494 | SSW | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|---|---|---|
| 1 | FR5 - Internal Plasterboard Stud Wall | 90.9 | |

## Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Bedroom 1 | FR5 - Timber Lined | 13.6 | Open | R0.0 | Carpet |
| Bedroom 2 | FR5 - Timber Lined | 10.4 | Open | R0.0 | Carpet |
| Bedroom 3 | FR5 - Timber Lined | 10.6 | Open | R0.0 | Carpet |
| Laundry Hallway | FR5 - Timber Lined | 5 | Open | R0.0 | Timber |
| Bath | FR5 - Timber Lined | 5.4 | Open | R0.0 | Tiles |
| Living | FR5 - Timber Lined | 18.9 | Open | R0.0 | Timber |
| Kitchen/Living | FR5 - Timber Lined | 29.9 | Open | R0.0 | Timber |
| WIR | FR5 - Timber Lined | 3.9 | Open | R0.0 | Carpet |
| Ensuite | FR5 - Timber Lined | 5.2 | Open | R0.0 | Tiles |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|

* Refer to glossary.

| | | | |
|---|---|---|---|
| Bedroom 1 | Plasterboard | R3.0 | Yes |
| Bedroom 2 | Plasterboard | R3.0 | Yes |
| Bedroom 3 | Plasterboard | R3.0 | Yes |
| Laundry Hallway | Plasterboard | R3.0 | Yes |
| Bath | Plasterboard | R3.0 | Yes |
| Living | Plasterboard | R3.0 | Yes |
| Kitchen/Living | Plasterboard | R3.0 | Yes |
| WIR | Plasterboard | R3.0 | Yes |
| Ensuite | Plasterboard | R3.0 | Yes |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|---|---|---|---|---|
| No Data Available | | | | |

## Ceiling *fans*

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

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Cont:Attic-Continuous | 1.3 | 0.5 | Medium |

* 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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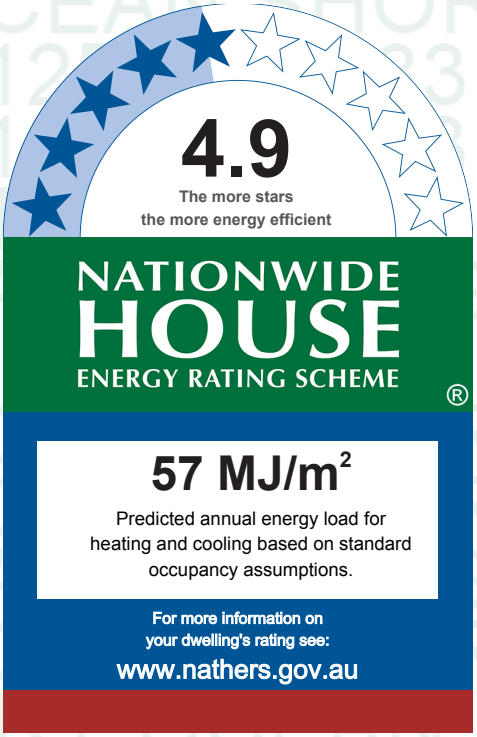
# Glossary

| | |
|---|---|
| **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. FM6AV12RA2

**Generated on 5 Feb 2021 using FirstRate5: 5.3.0a (3.21)**




## Property

| | |
|---|---|
| **Address** | 14, 2 Kulgun Court, OCEAN SHORES, NSW, 2483 |
| **Lot/DP** | 9//SP102058 |
| **NCC Class*** | Class 1a |
| **Type** | New Home |

## Plans

| | |
|---|---|
| **Main plan** | Project No. 20017 |
| **Prepared by** | Story Design Collective |

## Construction and environment

| **Assessed floor area (m²)*** | | **Exposure type** |
|---|---|---|
| Conditioned* | 97.4 | suburban |
| Unconditioned* | 5.4 | **NatHERS climate zone** |
| Total | 102.8 | 10, OCEAN SHORES |
| Garage | - | |

## Thermal performance

| Heating | Cooling |
|---|---|
| 19 MJ/m² | 38 MJ/m² |

**About the rating**

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

## Accredited assessor

| | |
|---|---|
| **Name** | Duncan Hope |
| **Business name** | Senica Consultancy Group |
| **Email** | duncan@senica.com.au |
| **Phone** | 61280067784 |
| **Accreditation No.** | DMN/14/1658 |
| **Assessor Accrediting Organisation** | DMN |
| **Declaration of interest** | Declaration completed: no conflicts |

## Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=FM6AV12RA2 When using either link, ensure you are visiting www.FR5.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

Due to limitations with the window library, windows have been used in a generic manner. Please ignore the brand/make and refer to the U-Value and SHGC requirements.

If downlights are used in construction, they should be Insulation Continuous rated so that insulation may be laid over the downlights with no requirement for holes in the insulation.

## Window and glazed door *type and performance*

### Default* windows

| | | | | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| **Window ID** | **Window description** | **Maximum U-value*** | **SHGC*** | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | Aluminium B SG Clear | 6.7 | 0.7 | 0.66 | 0.74 |

### Custom* windows

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

## Window and glazed door *Schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|---|---|---|---|---|---|---|---|---|
| Bedroom 1 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | ESE | No |
| Bedroom 1 | ALM-002-01 A | 2108dh | 2100 | 800 | double_hung | 45.0 | NNE | No |

* Refer to glossary.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bedroom 2 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bedroom 3 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bath | ALM-002-01 A | 0615s | 600 | 1500 | sliding | 45.0 | SSW | No |
| Living | ALM-002-01 A | 2424sd | 2400 | 2400 | sliding | 45.0 | WNW | No |
| Kitchen/Living | ALM-002-01 A | Opening 68 | 900 | 2400 | sliding | 45.0 | NNE | No |
| Kitchen/Living | ALM-002-01 A | 2434sd | 2400 | 3400 | sliding | 66.0 | ESE | No |
| Ensuite | ALM-002-01 A | 1206s | 1200 | 600 | sliding | 45.0 | SSW | No |

## Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Area (m²) | 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 (m²) | Orient-ation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Living | 2300 | 920 | 100.0 | WNW |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | Weatherboard - 90mm Weatherboard with R2.0 | 0.5 | Medium | Glass fibre batt: R2.0 (R2.0) | No |

## External wall *schedule*

* Refer to glossary.

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 1 | 1 | 2550 | 3775 | ESE | 0 | No |
| Bedroom 1 | 1 | 2550 | 3594 | NNE | 4217 | Yes |
| Bedroom 1 | 1 | 2550 | 3594 | SSW | 0 | No |
| Bedroom 2 | 1 | 2550 | 3170 | WNW | 6072 | Yes |
| Bedroom 2 | 1 | 2550 | 3498 | SSW | 0 | No |
| Bedroom 3 | 1 | 2550 | 2988 | SSW | 0 | No |
| Bath | 1 | 2550 | 2739 | SSW | 0 | No |
| Living | 1 | 2700 | 105 | NNE | 0 | Yes |
| Living | 1 | 2700 | 780 | ESE | 0 | Yes |
| Living | 1 | 2700 | 3903 | NNE | 0 | No |
| Living | 1 | 2700 | 4743 | WNW | 1625 | Yes |
| Kitchen/Living | 1 | 2700 | 4490 | NNE | 0 | No |
| Kitchen/Living | 1 | 2700 | 780 | WNW | 0 | No |
| Kitchen/Living | 1 | 2700 | 3134 | NNE | 0 | Yes |
| Kitchen/Living | 1 | 2700 | 4163 | ESE | 3973 | Yes |
| WIR | 1 | 2550 | 320 | NNE | 0 | Yes |
| Ensuite | 1 | 2550 | 2494 | SSW | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|---|---|---|
| 1 | FR5 - Internal Plasterboard Stud Wall | 90.9 | |

## Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Bedroom 1 | FR5 - Timber Lined | 13.6 | Open | R0.0 | Carpet |
| Bedroom 2 | FR5 - Timber Lined | 10.4 | Open | R0.0 | Carpet |
| Bedroom 3 | FR5 - Timber Lined | 10.6 | Open | R0.0 | Carpet |
| Laundry Hallway | FR5 - Timber Lined | 5 | Open | R0.0 | Timber |
| Bath | FR5 - Timber Lined | 5.4 | Open | R0.0 | Tiles |
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| Kitchen/Living | FR5 - Timber Lined | 29.9 | Open | R0.0 | Timber |
| WIR | FR5 - Timber Lined | 3.9 | Open | R0.0 | Carpet |
| Ensuite | FR5 - Timber Lined | 5.2 | Open | R0.0 | Tiles |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Bedroom 1 | Plasterboard | R3.0 | Yes |
| Bedroom 2 | Plasterboard | R3.0 | Yes |

* Refer to glossary.

| | | | |
|---|---|---|---|
| Bedroom 3 | Plasterboard | R3.0 | Yes |
| Laundry Hallway | Plasterboard | R3.0 | Yes |
| Bath | Plasterboard | R3.0 | Yes |
| Living | Plasterboard | R3.0 | Yes |
| Kitchen/Living | Plasterboard | R3.0 | Yes |
| WIR | Plasterboard | R3.0 | Yes |
| Ensuite | Plasterboard | R3.0 | Yes |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|---|---|---|---|---|
| No Data Available | | | | |

## Ceiling *fans*

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

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Cont:Attic-Continuous | 1.3 | 0.5 | Medium |

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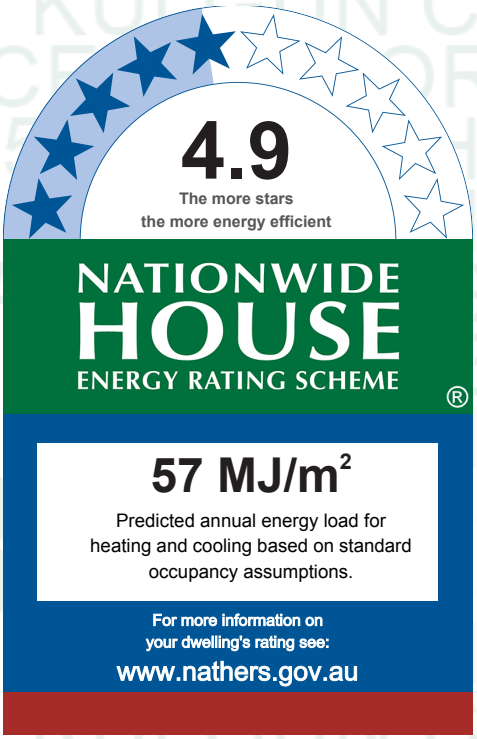
| **Ceiling penetrations** | features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling 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. HRKMXOXZ54

**Generated on 5 Feb 2021 using FirstRate5: 5.3.0a (3.21)**




## Property

| | |
|---|---|
| **Address** | 16, 2 Kulgun Court, OCEAN SHORES, NSW, 2483 |
| **Lot/DP** | 9//SP102058 |
| **NCC Class*** | Class 1a |
| **Type** | New Home |

## Plans

| | |
|---|---|
| **Main plan** | Project No. 20017 |
| **Prepared by** | Story Design Collective |

## Construction and environment

| **Assessed floor area (m²)*** | | **Exposure type** |
|---|---|---|
| Conditioned* | 97.4 | suburban |
| Unconditioned* | 5.4 | **NatHERS climate zone** |
| Total | 102.8 | 10, OCEAN SHORES |
| Garage | - | |

## Thermal performance

| Heating | Cooling |
|---|---|
| **19** MJ/m² | **38** MJ/m² |

**About the rating**

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

## Accredited assessor

| | |
|---|---|
| **Name** | Duncan Hope |
| **Business name** | Senica Consultancy Group |
| **Email** | duncan@senica.com.au |
| **Phone** | 61280067784 |
| **Accreditation No.** | DMN/14/1658 |
| **Assessor Accrediting Organisation** | DMN |
| **Declaration of interest** | Declaration completed: no conflicts |

## Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=HRKMXOXZ54 When using either link, ensure you are visiting www.FR5.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

Due to limitations with the window library, windows have been used in a generic manner. Please ignore the brand/make and refer to the U-Value and SHGC requirements.

If downlights are used in construction, they should be Insulation Continuous rated so that insulation may be laid over the downlights with no requirement for holes in the insulation.

## Window and glazed door *type and performance*

### Default* windows

| | | | | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| **Window ID** | **Window description** | **Maximum U-value*** | **SHGC*** | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | Aluminium B SG Clear | 6.7 | 0.7 | 0.66 | 0.74 |

### Custom* windows

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

## Window and glazed door *Schedule*

| **Location** | **Window ID** | **Window no.** | **Height (mm)** | **Width (mm)** | **Window type** | **Opening %** | **Orientation** | **Window shading device*** |
|---|---|---|---|---|---|---|---|---|
| Bedroom 1 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | ESE | No |
| Bedroom 1 | ALM-002-01 A | 2108dh | 2100 | 800 | double_hung | 45.0 | NNE | No |

* Refer to glossary.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bedroom 2 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bedroom 3 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bath | ALM-002-01 A | 0615s | 600 | 1500 | sliding | 45.0 | SSW | No |
| Living | ALM-002-01 A | 2424sd | 2400 | 2400 | sliding | 45.0 | WNW | No |
| Kitchen/Living | ALM-002-01 A | Opening 68 | 900 | 2400 | sliding | 45.0 | NNE | No |
| Kitchen/Living | ALM-002-01 A | 2434sd | 2400 | 3400 | sliding | 66.0 | ESE | No |
| Ensuite | ALM-002-01 A | 1206s | 1200 | 600 | sliding | 45.0 | SSW | No |

## Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Area (m²) | 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 (m²) | Orient-ation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Living | 2300 | 920 | 100.0 | WNW |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | Weatherboard - 90mm Weatherboard with R2.0 | 0.5 | Medium | Glass fibre batt: R2.0 (R2.0) | No |

## External wall *schedule*

* Refer to glossary.

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 1 | 1 | 2550 | 3775 | ESE | 0 | No |
| Bedroom 1 | 1 | 2550 | 3594 | NNE | 4217 | Yes |
| Bedroom 1 | 1 | 2550 | 3594 | SSW | 0 | No |
| Bedroom 2 | 1 | 2550 | 3170 | WNW | 6072 | Yes |
| Bedroom 2 | 1 | 2550 | 3498 | SSW | 0 | No |
| Bedroom 3 | 1 | 2550 | 2988 | SSW | 0 | No |
| Bath | 1 | 2550 | 2739 | SSW | 0 | No |
| Living | 1 | 2700 | 105 | NNE | 0 | Yes |
| Living | 1 | 2700 | 780 | ESE | 0 | Yes |
| Living | 1 | 2700 | 3903 | NNE | 0 | No |
| Living | 1 | 2700 | 4743 | WNW | 1625 | Yes |
| Kitchen/Living | 1 | 2700 | 4490 | NNE | 0 | No |
| Kitchen/Living | 1 | 2700 | 780 | WNW | 0 | No |
| Kitchen/Living | 1 | 2700 | 3134 | NNE | 0 | Yes |
| Kitchen/Living | 1 | 2700 | 4163 | ESE | 3973 | Yes |
| WIR | 1 | 2550 | 320 | NNE | 0 | Yes |
| Ensuite | 1 | 2550 | 2494 | SSW | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|---|---|---|
| 1 | FR5 - Internal Plasterboard Stud Wall | 90.9 | |

## Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Bedroom 1 | FR5 - Timber Lined | 13.6 | Open | R0.0 | Carpet |
| Bedroom 2 | FR5 - Timber Lined | 10.4 | Open | R0.0 | Carpet |
| Bedroom 3 | FR5 - Timber Lined | 10.6 | Open | R0.0 | Carpet |
| Laundry Hallway | FR5 - Timber Lined | 5 | Open | R0.0 | Timber |
| Bath | FR5 - Timber Lined | 5.4 | Open | R0.0 | Tiles |
| Living | FR5 - Timber Lined | 18.9 | Open | R0.0 | Timber |
| Kitchen/Living | FR5 - Timber Lined | 29.9 | Open | R0.0 | Timber |
| WIR | FR5 - Timber Lined | 3.9 | Open | R0.0 | Carpet |
| Ensuite | FR5 - Timber Lined | 5.2 | Open | R0.0 | Tiles |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|
| Bedroom 1 | Plasterboard | R3.0 | Yes |
| Bedroom 2 | Plasterboard | R3.0 | Yes |

* Refer to glossary.

| | | | |
|---|---|---|---|
| Bedroom 3 | Plasterboard | R3.0 | Yes |
| Laundry Hallway | Plasterboard | R3.0 | Yes |
| Bath | Plasterboard | R3.0 | Yes |
| Living | Plasterboard | R3.0 | Yes |
| Kitchen/Living | Plasterboard | R3.0 | Yes |
| WIR | Plasterboard | R3.0 | Yes |
| Ensuite | Plasterboard | R3.0 | Yes |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|---|---|---|---|---|
| No Data Available | | | | |

## Ceiling *fans*

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

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Cont:Attic-Continuous | 1.3 | 0.5 | Medium |

* 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.

## Disclaimer

The format of the NatHERS Certificate was developed by the NatHERSAdministrator. 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.

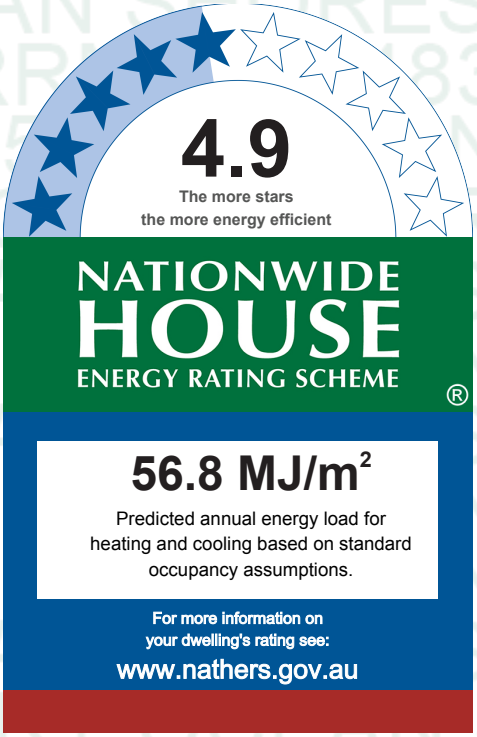
# Glossary

| | |
|---|---|
| **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. INQLERRMGC

**Generated on 5 Feb 2021 using FirstRate5: 5.3.0a (3.21)**




## Property

| | |
|---|---|
| **Address** | 13, 2 Kulgun Court, OCEAN SHORES, NSW, 2483 |
| **Lot/DP** | 9//SP102058 |
| **NCC Class*** | Class 1a |
| **Type** | New Home |

## Plans

| | |
|---|---|
| **Main plan** | Project No. 20017 |
| **Prepared by** | Story Design Collective |

## Construction and environment

| **Assessed floor area (m²)*** | |
|---|---|
| Conditioned* | 97.4 |
| Unconditioned* | 5.4 |
| Total | 102.8 |
| Garage | - |

**Exposure type**
suburban

**NatHERS climate zone**
10, OCEAN SHORES

## Thermal performance

| Heating | Cooling |
|---|---|
| **18.7** | **38.1** |
| MJ/m² | MJ/m² |

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

## Accredited assessor

| | |
|---|---|
| **Name** | Duncan Hope |
| **Business name** | Senica Consultancy Group |
| **Email** | duncan@senica.com.au |
| **Phone** | 61280067784 |
| **Accreditation No.** | DMN/14/1658 |
| **Assessor Accrediting Organisation** | DMN |
| **Declaration of interest** | Declaration completed: no conflicts |

## Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=INQLERRMGC When using either link, ensure you are visiting www.FR5.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

Due to limitations with the window library, windows have been used in a generic manner. Please ignore the brand/make and refer to the U-Value and SHGC requirements.

If downlights are used in construction, they should be Insulation Continuous rated so that insulation may be laid over the downlights with no requirement for holes in the insulation.

## Window and glazed door *type and performance*

### Default* windows

| | | | | Substitution tolerance ranges | |
|---|---|---|---|---|---|
| **Window ID** | **Window description** | **Maximum U-value*** | **SHGC*** | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | Aluminium B SG Clear | 6.7 | 0.7 | 0.66 | 0.74 |

### Custom* windows

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

## Window and glazed door *Schedule*

| **Location** | **Window ID** | **Window no.** | **Height (mm)** | **Width (mm)** | **Window type** | **Opening %** | **Orientation** | **Window shading device*** |
|---|---|---|---|---|---|---|---|---|
| Bedroom 1 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | ESE | No |
| Bedroom 1 | ALM-002-01 A | 2108dh | 2100 | 800 | double_hung | 45.0 | NNE | No |

* Refer to glossary.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bedroom 2 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bedroom 3 | ALM-002-01 A | 1221s | 1200 | 2100 | sliding | 45.0 | SSW | No |
| Bath | ALM-002-01 A | 0615s | 600 | 1500 | sliding | 45.0 | SSW | No |
| Living | ALM-002-01 A | 2424sd | 2400 | 2400 | sliding | 45.0 | WNW | No |
| Kitchen/Living | ALM-002-01 A | Opening 68 | 900 | 2400 | sliding | 45.0 | NNE | No |
| Kitchen/Living | ALM-002-01 A | 2434sd | 2400 | 3400 | sliding | 66.0 | ESE | No |
| Ensuite | ALM-002-01 A | 1206s | 1200 | 600 | sliding | 45.0 | SSW | No |

## Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

## Roof window *schedule*

| Location | Window ID | Window no. | Opening % | Area (m²) | 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 (m²) | Orient-ation | Outdoor shade | Diffuser | Skylight shaft reflectance |
|---|---|---|---|---|---|---|---|---|
| No Data Available | | | | | | | | |

## External door *schedule*

| Location | Height (mm) | Width (mm) | Opening % | Orientation |
|---|---|---|---|---|
| Living | 2300 | 920 | 100.0 | WNW |

## External wall *type*

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---|---|---|---|---|---|
| 1 | Weatherboard - 90mm Weatherboard with R2.0 | 0.5 | Medium | Glass fibre batt: R2.0 (R2.0) | No |
| 2 | Ret Walls - Conc. Block 190mm Retaining Walls w/ p'board | 0.5 | Medium | | No |

* Refer to glossary.

## External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|---|---|---|---|---|---|---|
| Bedroom 1 | 1 | 2550 | 3775 | ESE | 0 | No |
| Bedroom 1 | 1 | 2550 | 3594 | NNE | 4217 | Yes |
| Bedroom 1 | 1 | 2550 | 3594 | SSW | 0 | No |
| Bedroom 2 | 2 | 700 | 3170 | WNW | 0 | No |
| Bedroom 2 | 1 | 1850 | 3170 | WNW | 6072 | Yes |
| Bedroom 2 | 1 | 2550 | 3498 | SSW | 0 | No |
| Bedroom 3 | 1 | 2550 | 2988 | SSW | 0 | No |
| Bath | 1 | 2550 | 2739 | SSW | 0 | No |
| Living | 1 | 2700 | 105 | NNE | 0 | Yes |
| Living | 1 | 2700 | 780 | ESE | 0 | Yes |
| Living | 1 | 2700 | 3903 | NNE | 0 | No |
| Living | 1 | 2700 | 4743 | WNW | 1625 | Yes |
| Kitchen/Living | 1 | 2700 | 4490 | NNE | 0 | No |
| Kitchen/Living | 1 | 2700 | 780 | WNW | 0 | No |
| Kitchen/Living | 1 | 2700 | 3134 | NNE | 0 | Yes |
| Kitchen/Living | 1 | 2700 | 4163 | ESE | 3973 | Yes |
| WIR | 1 | 2550 | 320 | NNE | 0 | Yes |
| Ensuite | 1 | 2550 | 2494 | SSW | 0 | No |

## Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|---|---|---|
| 1 | FR5 - Internal Plasterboard Stud Wall | 90.9 | |

## Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|---|---|---|---|---|---|
| Bedroom 1 | FR5 - Timber Lined | 13.6 | Open | R0.0 | Carpet |
| Bedroom 2 | FR5 - Timber Lined | 10.4 | Open | R0.0 | Carpet |
| Bedroom 3 | FR5 - Timber Lined | 10.6 | Open | R0.0 | Carpet |
| Laundry Hallway | FR5 - Timber Lined | 5 | Open | R0.0 | Timber |
| Bath | FR5 - Timber Lined | 5.4 | Open | R0.0 | Tiles |
| Living | FR5 - Timber Lined | 18.9 | Open | R0.0 | Timber |
| Kitchen/Living | FR5 - Timber Lined | 29.9 | Open | R0.0 | Timber |
| WIR | FR5 - Timber Lined | 3.9 | Open | R0.0 | Carpet |
| Ensuite | FR5 - Timber Lined | 5.2 | Open | R0.0 | Tiles |

## Ceiling *type*

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|---|---|---|---|

* Refer to glossary.

| | | | |
|---|---|---|---|
| Bedroom 1 | Plasterboard | R3.0 | Yes |
| Bedroom 2 | Plasterboard | R3.0 | Yes |
| Bedroom 3 | Plasterboard | R3.0 | Yes |
| Laundry Hallway | Plasterboard | R3.0 | Yes |
| Bath | Plasterboard | R3.0 | Yes |
| Living | Plasterboard | R3.0 | Yes |
| Kitchen/Living | Plasterboard | R3.0 | Yes |
| WIR | Plasterboard | R3.0 | Yes |
| Ensuite | Plasterboard | R3.0 | Yes |

## Ceiling *penetrations**

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|---|---|---|---|---|
| No Data Available | | | | |

## Ceiling *fans*

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

## Roof *type*

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|---|---|---|---|
| Cont:Attic-Continuous | 1.3 | 0.5 | Medium |

* 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.

## Disclaimer

The format of the NatHERS Certificate was developed by the NatHERSAdministrator. 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). |