

Nationwide House Energy Rating Scheme — Class 2 summary

NatHERS Certificate No. 0008501010

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address 18-28 Simpson St , Dundas Valley , NSW , 2117

Lot/DP 1707/31846

NatHERS climate zone 56

Accredited assessor 

John Boutros

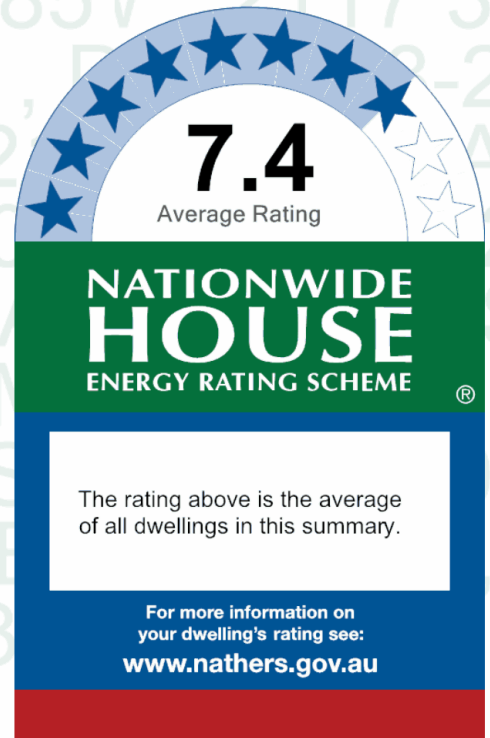
Greenworld Architectural Drafting

greenworldarchi@outlook.com

02 9652 0045

Accreditation No. DMN/16/1763

Assessor Accrediting Organisation Design Matters
National



Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=oCrMwwWYk.
When using either link, ensure you are visiting hstar.com.au

Summary of all dwellings

| Certificate number and link | Unit Number | Heating load (MJ/m ² /p.a.) | Cooling load (MJ/m ² /p.a.) | Total load (MJ/m ² /p.a.) | Star rating |
|-------------------------------|-------------|--|--|--------------------------------------|-------------|
| 0008500811-01 | MH1-U1 | 20.9 | 4.5 | 25.4 | 8 |
| 0008500829-01 | MH1-U2 | 40.3 | 3.8 | 44.1 | 6.6 |
| 0008500837-01 | MH1-U3 | 12.4 | 12 | 24.4 | 8.1 |
| 0008500845-01 | MH1-U4 | 21.4 | 13.6 | 35 | 7.3 |
| 0008500852-01 | MH2-U1 | 32 | 5.1 | 37.1 | 7.1 |

Continued Over

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated buildings 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 all dwellings (continued)

| Certificate number and link | Unit Number | Heating load (MJ/m ² /p.a.) | Cooling load (MJ/m ² /p.a.) | Total load (MJ/m ² /p.a.) | Star rating |
|-------------------------------|-------------|--|--|--------------------------------------|-------------|
| 0008500860-01 | MH2-U2 | 40.5 | 4.3 | 44.7 | 6.5 |
| 0008500878-01 | MH2-U3 | 16 | 10.8 | 26.8 | 7.9 |
| 0008500886-01 | MH2-U4 | 20.5 | 16.9 | 37.4 | 7.1 |
| 0008500894-01 | MH3-U1 | 21.7 | 4.3 | 26 | 7.9 |
| 0008500902-01 | MH3-U2 | 42.1 | 3.9 | 46 | 6.4 |
| 0008500910-01 | MH3-U3 | 13.1 | 11.1 | 24.2 | 8.2 |
| 0008500928-01 | MH3-U4 | 22.1 | 13.4 | 35.5 | 7.2 |
| 0008500936-01 | MH4-U1 | 24.5 | 5.5 | 30 | 7.7 |
| 0008500944-01 | MH4-U2 | 30.7 | 4.3 | 35 | 7.3 |
| 0008500951-01 | MH4-U3 | 14.9 | 12 | 26.9 | 7.9 |
| 0008500969-01 | MH4-U4 | 17.3 | 16.8 | 34.1 | 7.3 |
| Average | | 24.4 | 8.89 | 33.29 | 7.41 |

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. 0008500811-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH1-U1, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| | |
|---|-----------------------------|
| Assessed floor area (m²*) | Exposure Type |
| Conditioned* 63.0 | Suburban |
| Unconditioned* 7.0 | NatHERS climate zone |
| Total 70.0 | 56 |
| Garage 0.0 | |



Accredited assessor

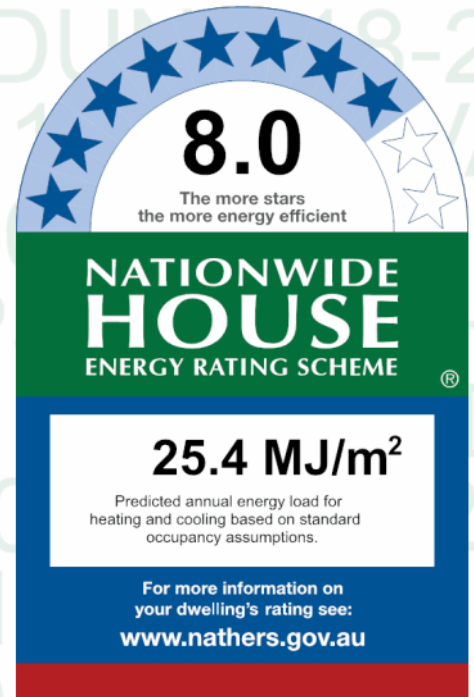
Name John Boutros
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Phone 02 9652 0045
Accreditation No. DMN/16/1763
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| | |
|-------------------------|-------------------------|
| Heating | Cooling |
| 20.9 | 4.5 |
| MJ/m² | MJ/m² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=MoeldmVwl.

When using either link, ensure you are visiting hstar.com.au





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|-----------------------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-001-01 A | ALM-001-01 A Aluminium A SG Clear | 6.7 | 0.57 | 0.54 | 0.60 |
| ALM-002-01 A | ALM-002-01 A Aluminium B SG Clear | 6.7 | 0.70 | 0.66 | 0.73 |

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |
| Kitchen/Living | ALM-002-01 A | n/a | 2400 | 2400 | n/a | 45 | NW | No |
| Bedroom 1 | ALM-002-01 A | n/a | 1600 | 1800 | n/a | 45 | NW | No |
| Bath | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Bedroom 2 | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---|-----------------------|
| EW-1 | Cavity Brick | 0.50 | Medium | Foil, Anti-glare one side, Reflective other | Yes |
| EW-2 | Cavity Brick | 0.30 | Light | Foil, Anti-glare one side, Reflective other | Yes |
| EW-3 | Cavity Brick | 0.30 | Light | Foil, Anti-glare one side, Reflective other | Yes |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 7800 | NE | 0 | NO |
| Kitchen/Living | EW-2 | 2700 | 3945 | NW | 2700 | YES |
| Bedroom 1 | EW-2 | 2700 | 3645 | SW | 0 | NO |
| Bedroom 1 | EW-3 | 2700 | 4100 | NW | 400 | NO |
| Bedroom 1 | EW-2 | 2700 | 2100 | NE | 4000 | YES |
| Bath | EW-2 | 2700 | 2890 | SW | 0 | NO |
| Bedroom 2 | EW-2 | 2700 | 3145 | SW | 0 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|-----------------------------------|-----------|------------------------|-----------------|
| IW-1 - Cavity brick, plasterboard | | 22.00 | No Insulation |
| IW-2 - Single Skin Brick | | 55.00 | No insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|-------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab on Ground 100mm | 33.60 | None | No Insulation | Ceramic Tiles 8mm |
| Hallway | Concrete Slab on Ground 100mm | 3.50 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab on Ground 100mm | 14.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Concrete Slab on Ground 100mm | 6.70 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2 | Concrete Slab on Ground 100mm | 11.00 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|-----------|----------------------------|---|------------------|
| Bedroom 2 | Concrete, Plasterboard | No insulation | No |

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 16 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Hallway | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom 1 | 1 | 1400 |
| Bedroom 2 | 1 | 1400 |

Roof type

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

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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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 10m e.g. city and industrial areas. |
| Horizontal shading feature | provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. |
| National Construction Code (NCC) Class | the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au . |
| Opening percentage | the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. |
| Provisional value | an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au |
| Reflective wrap (also known as foil) | can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. |
| Roof window | for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. |
| Shading device | a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves. |
| Shading features | includes neighbouring buildings, fences, and wing walls, but excludes eaves. |
| Solar heat gain coefficient (SHGC) | the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. |
| Skylight (also known as roof lights) | for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. |
| U-value | the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. |
| Unconditioned | a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. |
| Vertical shading features | provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). |

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500829-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

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Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 44.0 |
| Unconditioned* | 6.0 |
| Total | 50.0 |
| Garage | 0.0 |

NatHERS climate zone 56



Accredited assessor

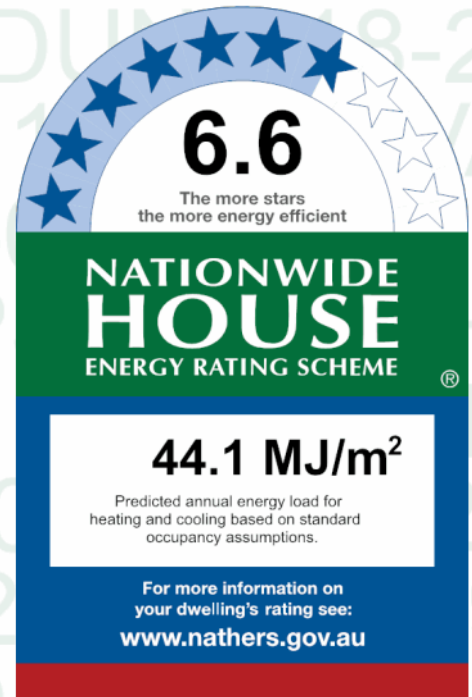
Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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Thermal performance

| Heating | Cooling |
|----------------------------------|---------------------------------|
| 40.3 MJ/m ² | 3.8 MJ/m ² |

About the rating

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 1500 | 1700 | n/a | 45 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 2400 | 2400 | n/a | 45 | SE | No |
| Kitchen/Living | ALM-004-01 A | n/a | 1200 | 1700 | n/a | 45 | SW | No |
| Bath | ALM-003-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |
| Bedroom | ALM-004-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---|-----------------------|
| EW-1 | Cavity Brick | 0.30 | Light | Foil Sided Bubble Wrap, Anti-glare one side | No |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 4145 | NE | 400 | NO |
| Kitchen/Living | EW-1 | 2700 | 6700 | SE | 2300 | NO |
| Kitchen/Living | EW-1 | 2700 | 4145 | SW | 0 | YES |
| Bath | EW-1 | 2700 | 2745 | NE | 400 | NO |
| Bedroom | EW-1 | 2700 | 600 | SE | 0 | YES |
| Bedroom | EW-1 | 2700 | 3400 | SW | 0 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|-----------------------------------|-----------|------------------------|-----------------|
| IW-1 - Single Skin Brick | | 39.00 | No insulation |
| IW-2 - Cavity brick, plasterboard | | 21.00 | No Insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|-------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab on Ground 100mm | 26.80 | None | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Concrete Slab on Ground 100mm | 4.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab on Ground 100mm | 5.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom | Concrete Slab on Ground 100mm | 12.60 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 10 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|----------------|----------|------------------|----------------|-----------------|
| Kitchen/Living | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom | 1 | 1400 |

Roof type

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

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

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

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

Glossary

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500837-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH1-U3, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| | |
|---|-----------------------------|
| Assessed floor area (m²*) | Exposure Type |
| Conditioned* 63.0 | Suburban |
| Unconditioned* 7.0 | NatHERS climate zone |
| Total 70.0 | 56 |
| Garage 0.0 | |



Accredited assessor

Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763

Assessor Accrediting Organisation

Design Matters National

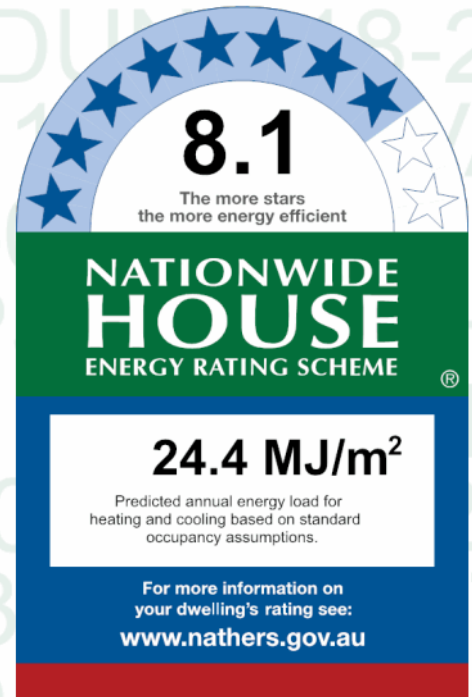
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| | |
|-------------------------|-------------------------|
| Heating | Cooling |
| 12.4 | 12.0 |
| MJ/m² | MJ/m² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=PjDTwGMGQ.

When using either link, ensure you are visiting hstar.com.au





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|-----------------------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-001-01 A | ALM-001-01 A Aluminium A SG Clear | 6.7 | 0.57 | 0.54 | 0.60 |
| ALM-002-01 A | ALM-002-01 A Aluminium B SG Clear | 6.7 | 0.70 | 0.66 | 0.73 |

Custom* windows

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

Window and glazed door schedule

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |
| Kitchen/Living | ALM-002-01 A | n/a | 2400 | 2400 | n/a | 45 | NW | No |
| Bedroom 1 | ALM-002-01 A | n/a | 1600 | 1800 | n/a | 45 | NW | No |
| Bath | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Bedroom 2 | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---------------------------------------|-----------------------|
| EW-1 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |
| EW-2 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 7800 | NE | 0 | NO |
| Kitchen/Living | EW-1 | 2700 | 3995 | NW | 2700 | YES |
| Bedroom 1 | EW-2 | 2700 | 3695 | SW | 0 | NO |
| Bedroom 1 | EW-2 | 2700 | 4100 | NW | 400 | NO |
| Bedroom 1 | EW-2 | 2700 | 2100 | NE | 4000 | YES |
| Bath | EW-2 | 2700 | 2990 | SW | 0 | NO |
| Bedroom 2 | EW-2 | 2700 | 3195 | SW | 0 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|---|-----------|------------------------|-----------------|
| IW-1 - Cavity brick, plasterboard | | 22.00 | No Insulation |
| IW-2 - Cavity wall, direct fix plasterboard, single gap | | 55.00 | No insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|---------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 33.70 | None | No Insulation | Ceramic Tiles 8mm |
| Hallway | Concrete Slab, Unit Below 150mm | 3.60 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 14.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Concrete Slab, Unit Below 150mm | 6.70 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2 | Concrete Slab, Unit Below 150mm | 11.10 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 16 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Hallway | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom 1 | 1 | 1400 |
| Bedroom 2 | 1 | 1400 |

Roof type

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|-----------------|--|-------------------|------------|
| Corrugated Iron | Bulk, Reflective Side Down, Anti-glare Up R1.7 | 0.30 | Light |

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|---|--|
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| Exposure category – exposed | terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). |
| Exposure category – open | terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m; farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). |
| Exposure category – suburban | terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. |
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| Shading features | includes neighbouring buildings, fences, and wing walls, but excludes eaves. |
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| 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. 0008500845-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH1-U4, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 44.0 |
| Unconditioned* | 6.0 |
| Total | 50.0 |
| Garage | 0.0 |

NatHERS climate zone 56



Accredited assessor

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Assessor Accrediting Organisation

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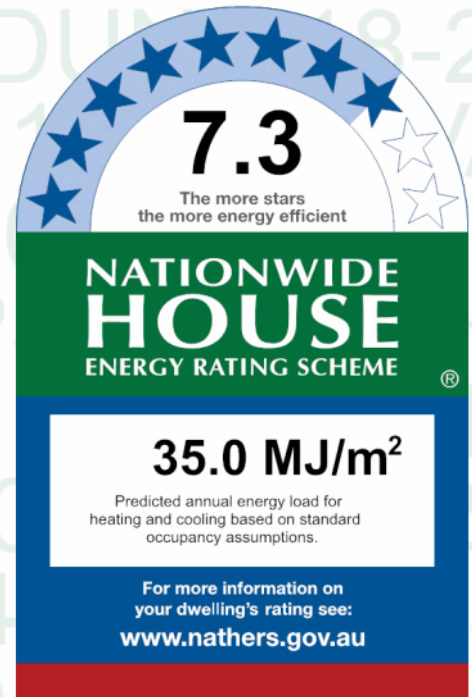
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|----------------------------------|----------------------------------|
| 21.4 MJ/m ² | 13.6 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=gPDrucBxe.

When using either link, ensure you are visiting hstar.com.au





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

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

Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|-----------|--------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |

No Data Available

Window and glazed door schedule

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 1500 | 1700 | n/a | 45 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 2400 | 2400 | n/a | 45 | SE | No |
| Kitchen/Living | ALM-004-01 A | n/a | 1200 | 1700 | n/a | 45 | SW | No |
| Bath | ALM-003-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |
| Bedroom | ALM-004-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---------------------------------------|-----------------------|
| EW-1 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |

External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 4195 | NE | 400 | NO |
| Kitchen/Living | EW-1 | 2700 | 6700 | SE | 2300 | NO |
| Kitchen/Living | EW-1 | 2700 | 4195 | SW | 0 | YES |
| Kitchen/Living | EW-1 | 2700 | 1295 | NW | 2700 | NO |
| Kitchen/Living | EW-1 | 2700 | 600 | NE | 3000 | YES |
| Bath | EW-1 | 2700 | 2195 | NW | 3300 | YES |
| Bath | EW-1 | 2700 | 2795 | NE | 400 | NO |
| Bedroom | EW-1 | 2700 | 600 | SE | 0 | YES |
| Bedroom | EW-1 | 2700 | 3400 | SW | 0 | NO |
| Bedroom | EW-1 | 2700 | 3795 | NW | 2700 | NO |

Internal wall *type*

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|---|-----------|------------------------|-----------------|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 39.00 | No insulation |

Floor *type*

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|---------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 26.90 | None | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 4.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab, Unit Below 150mm | 5.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom | Concrete Slab, Unit Below 150mm | 12.60 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling *type*

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 10 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Kitchen/Living | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom | 1 | 1400 |

Roof type

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|-----------------|--|-------------------|------------|
| Corrugated Iron | Bulk, Reflective Side Down, Anti-glare Up R1.7 | 0.30 | Light |

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

Glossary

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500852-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH2-U1, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 63.0 |
| Unconditioned* | 7.0 |
| Total | 70.0 |
| Garage | 0.0 |

NatHERS climate zone 56



Accredited assessor

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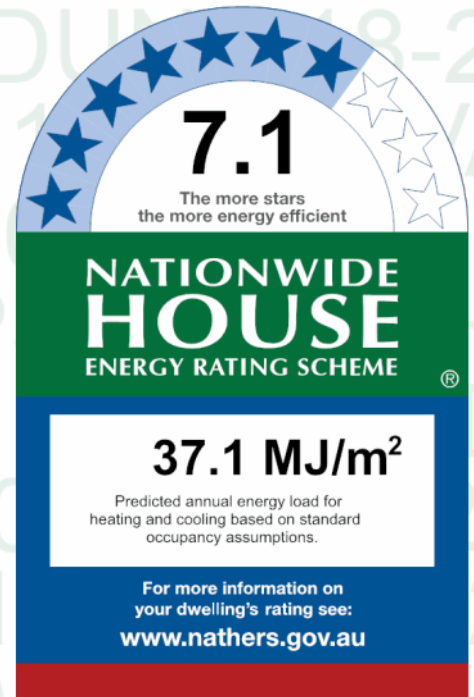
Declaration of interest Declaration completed: no conflicts

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Thermal performance

| Heating | Cooling |
|----------------------------------|---------------------------------|
| 32.0 MJ/m ² | 5.1 MJ/m ² |

About the rating

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Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|-----------------------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | ALM-002-01 A Aluminium B SG Clear | 6.7 | 0.70 | 0.66 | 0.73 |
| ALM-001-01 A | ALM-001-01 A Aluminium A SG Clear | 6.7 | 0.57 | 0.54 | 0.60 |

Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|-----------|--------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |

No Data Available

Window and glazed door schedule

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-002-01 A | n/a | 2400 | 2400 | n/a | 45 | NW | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Kitchen/Living | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |
| Bedroom 1 | ALM-002-01 A | n/a | 1600 | 1800 | n/a | 45 | NW | No |
| Bath | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |
| Bedroom 2 | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---|-----------------------|
| EW-1 | Cavity Brick | 0.30 | Light | Foil, Anti-glare one side, Reflective other | Yes |
| EW-2 | Cavity Brick | 0.50 | Medium | Foil, Anti-glare one side, Reflective other | Yes |
| EW-3 | Cavity Brick | 0.30 | Light | Foil, Anti-glare one side, Reflective other | Yes |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 3945 | NW | 2700 | YES |
| Kitchen/Living | EW-2 | 2700 | 7800 | SW | 0 | NO |
| Bedroom 1 | EW-3 | 2700 | 2100 | SW | 4000 | YES |
| Bedroom 1 | EW-1 | 2700 | 4100 | NW | 400 | NO |
| Bedroom 1 | EW-3 | 2700 | 3645 | NE | 0 | NO |
| Bath | EW-3 | 2700 | 2890 | NE | 300 | NO |
| Bedroom 2 | EW-3 | 2700 | 3145 | NE | 300 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|-----------------------------------|-----------|------------------------|-----------------|
| IW-1 - Single Skin Brick | | 55.00 | No insulation |
| IW-2 - Cavity brick, plasterboard | | 22.00 | No Insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|-------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab on Ground 100mm | 33.60 | None | No Insulation | Ceramic Tiles 8mm |
| Hallway | Concrete Slab on Ground 100mm | 3.50 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab on Ground 100mm | 14.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Concrete Slab on Ground 100mm | 6.70 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2 | Concrete Slab on Ground 100mm | 11.00 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|-----------|----------------------------|---|------------------|
| Bedroom 2 | Concrete, Plasterboard | No insulation | No |

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 16 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Hallway | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom 1 | 1 | 1400 |
| Bedroom 2 | 1 | 1400 |

Roof type

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

Explanatory notes

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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.

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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 10m e.g. city and industrial areas. |
| Horizontal shading feature | provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. |
| National Construction Code (NCC) Class | the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au . |
| Opening percentage | the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. |
| Provisional value | an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au |
| Reflective wrap (also known as foil) | can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. |
| Roof window | for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. |
| Shading device | a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves. |
| Shading features | includes neighbouring buildings, fences, and wing walls, but excludes eaves. |
| Solar heat gain coefficient (SHGC) | the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. |
| Skylight (also known as roof lights) | for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. |
| U-value | the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. |
| Unconditioned | a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. |
| Vertical shading features | provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). |

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500860-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH2-U2, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 44.0 |
| Unconditioned* | 6.0 |
| Total | 50.0 |
| Garage | 0.0 |

| NatHERS climate zone |
|----------------------|
| Suburban |
| 56 |



Accredited assessor

Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763

Assessor Accrediting Organisation

Design Matters National

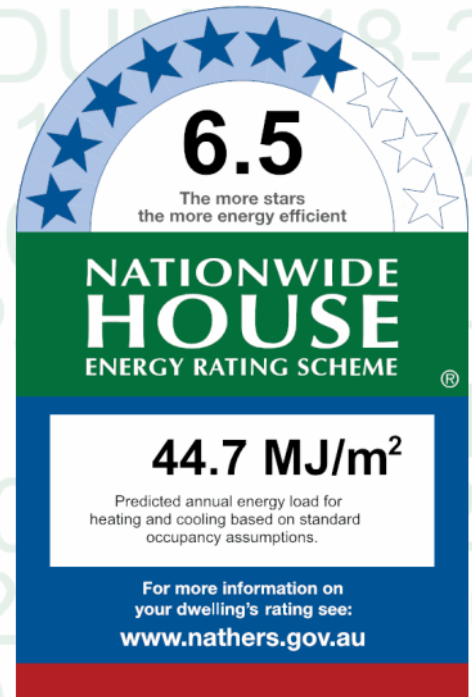
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|----------------------------------|---------------------------------|
| 40.5 MJ/m ² | 4.3 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=ZVcmbIsPK.

When using either link, ensure you are visiting hstar.com.au



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|---|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-004-03 A | ALM-004-03 A Aluminium B DG Air Fill High Solar Gain low-E -Clear | 4.3 | 0.53 | 0.50 | 0.56 |
| ALM-003-03 A | ALM-003-03 A Aluminium A DG Air Fill High Solar Gain low-E -Clear | 4.3 | 0.47 | 0.45 | 0.49 |

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-03 A | n/a | 1200 | 1700 | n/a | 45 | NE | No |
| Kitchen/Living | ALM-004-03 A | n/a | 2400 | 2400 | n/a | 45 | SE | No |
| Kitchen/Living | ALM-004-03 A | n/a | 1500 | 1700 | n/a | 45 | SW | No |
| Bath | ALM-003-03 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Bedroom | ALM-004-03 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight *schedule*

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

External door *schedule*

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---|-----------------------|
| EW-1 | Cavity Brick | 0.30 | Light | Foil Sided Bubble Wrap, Anti-glare one side | No |
| EW-2 | Cavity Brick | 0.30 | Light | Foil Sided Bubble Wrap, Anti-glare one side | No |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 4345 | NE | 400 | YES |
| Kitchen/Living | EW-2 | 2700 | 6700 | SE | 2300 | NO |
| Kitchen/Living | EW-1 | 2700 | 4045 | SW | 0 | NO |
| Bath | EW-1 | 2700 | 2845 | SW | 0 | NO |
| Bedroom | EW-1 | 2700 | 3200 | NE | 400 | NO |
| Bedroom | EW-1 | 2700 | 600 | SE | 1600 | YES |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|-----------------------------------|-----------|------------------------|-----------------|
| IW-1 - Single Skin Brick | | 39.00 | No insulation |
| IW-2 - Cavity brick, plasterboard | | 21.00 | No Insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|-------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab on Ground 100mm | 27.20 | None | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Concrete Slab on Ground 100mm | 4.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab on Ground 100mm | 6.10 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom | Concrete Slab on Ground 100mm | 11.80 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 10 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Kitchen/Living | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom | 1 | 1400 |

Roof type

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

Explanatory notes

About this report

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

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

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

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|---|--|
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| 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. |
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| Exposure category – open | terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). |
| Exposure category – suburban | terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. |
| Exposure category – protected | terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas. |
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| Opening percentage | the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. |
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| 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. 0008500878-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH2-U3, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 63.0 |
| Unconditioned* | 7.0 |
| Total | 70.0 |
| Garage | 0.0 |

NatHERS climate zone 56



Accredited assessor

Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763

Assessor Accrediting Organisation

Design Matters National

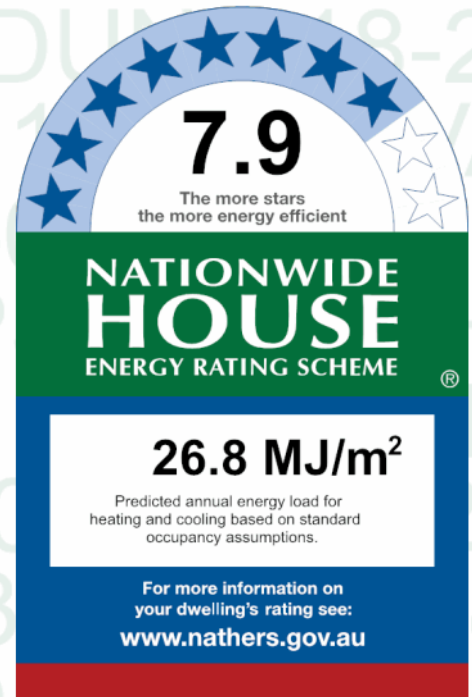
Declaration of interest Declaration completed: no conflicts

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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.



Thermal performance

| Heating | Cooling |
|----------------------------------|----------------------------------|
| 16.0 MJ/m ² | 10.8 MJ/m ² |

About the rating

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Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=HOSCwpCbg. When using either link, ensure you are visiting hstar.com.au



Certificate check

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|-----------------------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | ALM-002-01 A Aluminium B SG Clear | 6.7 | 0.70 | 0.66 | 0.73 |
| ALM-001-01 A | ALM-001-01 A Aluminium A SG Clear | 6.7 | 0.57 | 0.54 | 0.60 |

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-002-01 A | n/a | 2400 | 2400 | n/a | 45 | NW | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Kitchen/Living | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |
| Bedroom 1 | ALM-002-01 A | n/a | 1600 | 1800 | n/a | 45 | NW | No |
| Bath | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |
| Bedroom 2 | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---------------------------------------|-----------------------|
| EW-1 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |
| EW-2 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 3995 | NW | 2600 | YES |
| Kitchen/Living | EW-1 | 2700 | 7800 | SW | 0 | NO |
| Bedroom 1 | EW-2 | 2700 | 2100 | SW | 4000 | YES |
| Bedroom 1 | EW-2 | 2700 | 4100 | NW | 400 | NO |
| Bedroom 1 | EW-2 | 2700 | 3695 | NE | 0 | NO |
| Bath | EW-2 | 2700 | 2990 | NE | 300 | NO |
| Bedroom 2 | EW-2 | 2700 | 3195 | NE | 300 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|---|-----------|------------------------|-----------------|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 55.00 | No insulation |
| IW-2 - Cavity brick, plasterboard | | 22.00 | No Insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|---------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 33.70 | None | No Insulation | Ceramic Tiles 8mm |
| Hallway | Concrete Slab, Unit Below 150mm | 3.60 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 14.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Concrete Slab, Unit Below 150mm | 6.70 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2 | Concrete Slab, Unit Below 150mm | 11.10 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 16 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Hallway | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom 1 | 1 | 1400 |
| Bedroom 2 | 1 | 1400 |

Roof type

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|-----------------|--|-------------------|------------|
| Corrugated Iron | Bulk, Reflective Side Down, Anti-glare Up R1.7 | 0.50 | Medium |

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.

Accredited assessors

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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

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

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

Glossary

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500886-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH2-U4, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 44.0 |
| Unconditioned* | 6.0 |
| Total | 50.0 |
| Garage | 0.0 |

| NatHERS climate zone |
|----------------------|
| Suburban |
| 56 |



Accredited assessor

Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763

Assessor Accrediting Organisation

Design Matters National

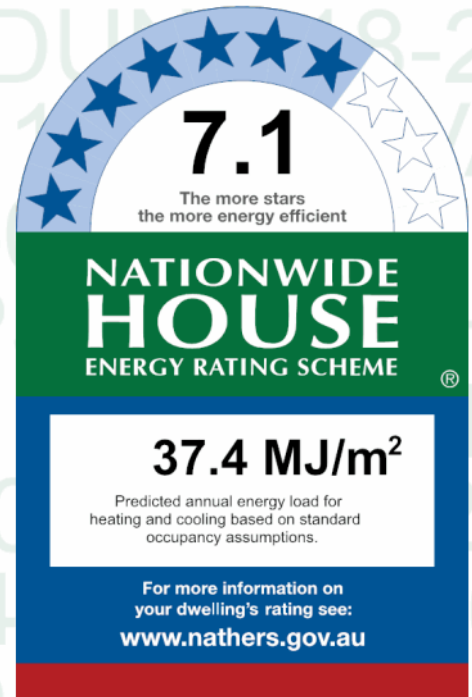
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|---------------------------|---------------------------|
| 20.5 MJ/m ² | 16.9 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=vNBgteSzc.

When using either link, ensure you are visiting hstar.com.au





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

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

Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|-----------|--------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |

No Data Available

Window and glazed door schedule

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 1200 | 1700 | n/a | 45 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 2400 | 2400 | n/a | 45 | SE | No |
| Kitchen/Living | ALM-004-01 A | n/a | 1500 | 1700 | n/a | 45 | SW | No |
| Bath | ALM-003-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Bedroom | ALM-004-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---------------------------------------|-----------------------|
| EW-1 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |

External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 4395 | NE | 0 | YES |
| Kitchen/Living | EW-1 | 2700 | 6700 | SE | 2400 | NO |
| Kitchen/Living | EW-1 | 2700 | 4195 | SW | 0 | NO |
| Kitchen/Living | EW-1 | 2700 | 600 | SW | 3100 | YES |
| Kitchen/Living | EW-1 | 2700 | 1295 | NW | 3400 | NO |
| Bath | EW-1 | 2700 | 2795 | SW | 0 | NO |
| Bath | EW-1 | 2700 | 2195 | NW | 4000 | YES |
| Bedroom | EW-1 | 2700 | 3795 | NW | 3400 | NO |
| Bedroom | EW-1 | 2700 | 3200 | NE | 400 | NO |
| Bedroom | EW-1 | 2700 | 600 | SE | 2200 | YES |

Internal wall *type*

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|---|-----------|------------------------|-----------------|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 39.00 | No insulation |

Floor *type*

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|---------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 27.50 | None | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 4.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab, Unit Below 150mm | 5.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom | Concrete Slab, Unit Below 150mm | 11.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling *type*

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 10 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Kitchen/Living | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom | 1 | 1400 |

Roof type

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|-----------------|--|-------------------|------------|
| Corrugated Iron | Bulk, Reflective Side Down, Anti-glare Up R1.7 | 0.50 | Medium |

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| | |
|---|--|
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| Entrance door | these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building. |
| Exposure category – exposed | terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors). |
| Exposure category – open | terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). |
| Exposure category – suburban | terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. |
| Exposure category – protected | terrain with numerous, closely spaced obstructions over 10m e.g. city and industrial areas. |
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| 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. 0008500894-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH3-U1, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 63.0 |
| Unconditioned* | 7.0 |
| Total | 70.0 |
| Garage | 0.0 |

NatHERS climate zone 56



Accredited assessor

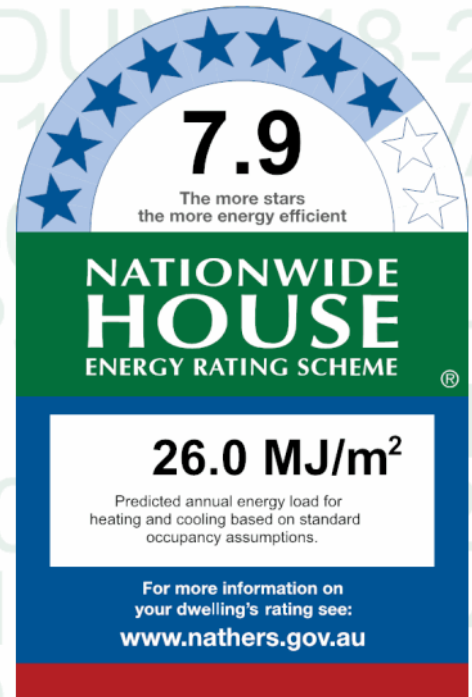
Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|----------------------------------|---------------------------------|
| 21.7 MJ/m ² | 4.3 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=LajZHTFLd.

When using either link, ensure you are visiting hstar.com.au





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|-----------------------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-001-01 A | ALM-001-01 A Aluminium A SG Clear | 6.7 | 0.57 | 0.54 | 0.60 |
| ALM-002-01 A | ALM-002-01 A Aluminium B SG Clear | 6.7 | 0.70 | 0.66 | 0.73 |

Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|-----------|--------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |

No Data Available

Window and glazed door schedule

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |
| Kitchen/Living | ALM-002-01 A | n/a | 2400 | 2400 | n/a | 45 | NW | No |
| Bedroom 1 | ALM-002-01 A | n/a | 1600 | 1800 | n/a | 45 | NW | No |
| Bath | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Bedroom 2 | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---|-----------------------|
| EW-1 | Cavity Brick | 0.50 | Medium | Foil, Anti-glare one side, Reflective other | Yes |
| EW-2 | Cavity Brick | 0.30 | Light | Foil, Anti-glare one side, Reflective other | Yes |
| EW-3 | Cavity Brick | 0.30 | Light | Foil, Anti-glare one side, Reflective other | Yes |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 7800 | NE | 0 | NO |
| Kitchen/Living | EW-2 | 2700 | 3945 | NW | 2700 | YES |
| Bedroom 1 | EW-2 | 2700 | 3645 | SW | 0 | NO |
| Bedroom 1 | EW-3 | 2700 | 4100 | NW | 400 | NO |
| Bedroom 1 | EW-2 | 2700 | 2100 | NE | 4000 | YES |
| Bath | EW-2 | 2700 | 2890 | SW | 0 | NO |
| Bedroom 2 | EW-2 | 2700 | 3145 | SW | 0 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|-----------------------------------|-----------|------------------------|-----------------|
| IW-1 - Cavity brick, plasterboard | | 22.00 | No Insulation |
| IW-2 - Single Skin Brick | | 55.00 | No insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|-------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab on Ground 100mm | 33.60 | None | No Insulation | Ceramic Tiles 8mm |
| Hallway | Concrete Slab on Ground 100mm | 3.50 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab on Ground 100mm | 14.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Concrete Slab on Ground 100mm | 6.70 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2 | Concrete Slab on Ground 100mm | 11.00 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|-----------|----------------------------|---|------------------|
| Bedroom 2 | Concrete, Plasterboard | No insulation | No |

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 16 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Hallway | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom 1 | 1 | 1400 |
| Bedroom 2 | 1 | 1400 |

Roof type

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

Explanatory notes

About this report

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

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

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

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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 10m e.g. city and industrial areas. |
| Horizontal shading feature | provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. |
| National Construction Code (NCC) Class | the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au . |
| Opening percentage | the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. |
| Provisional value | an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au |
| Reflective wrap (also known as foil) | can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. |
| Roof window | for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. |
| Shading device | a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves. |
| Shading features | includes neighbouring buildings, fences, and wing walls, but excludes eaves. |
| Solar heat gain coefficient (SHGC) | the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. |
| Skylight (also known as roof lights) | for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. |
| U-value | the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. |
| Unconditioned | a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. |
| Vertical shading features | provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). |

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500902-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH3-U2, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|-----------------------------|
| Conditioned* 44.0 | Suburban |
| Unconditioned* 6.0 | NatHERS climate zone |
| Total 50.0 | 56 |
| Garage 0.0 | |



Accredited assessor

Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763

Assessor Accrediting Organisation

Design Matters National

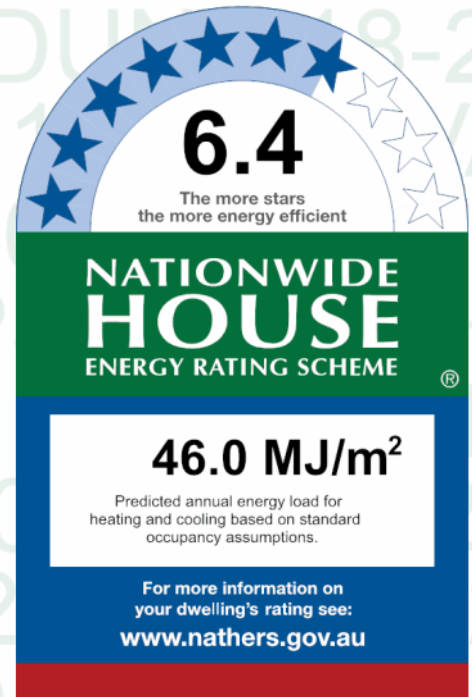
Declaration of interest Declaration completed: no conflicts

National Construction Code (NCC) requirements

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



Thermal performance

| Heating | Cooling |
|----------------------------------|---------------------------------|
| 42.1 MJ/m ² | 3.9 MJ/m ² |

About the rating

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Verification

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 1500 | 1700 | n/a | 45 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 2400 | 2400 | n/a | 45 | SE | No |
| Kitchen/Living | ALM-004-01 A | n/a | 1200 | 1700 | n/a | 45 | SW | No |
| Bath | ALM-003-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |
| Bedroom | ALM-004-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---|-----------------------|
| EW-1 | Cavity Brick | 0.30 | Light | Foil Sided Bubble Wrap, Anti-glare one side | No |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 4145 | NE | 400 | NO |
| Kitchen/Living | EW-1 | 2700 | 6700 | SE | 2300 | NO |
| Kitchen/Living | EW-1 | 2700 | 4145 | SW | 0 | YES |
| Bath | EW-1 | 2700 | 2745 | NE | 400 | NO |
| Bedroom | EW-1 | 2700 | 600 | SE | 0 | YES |
| Bedroom | EW-1 | 2700 | 3400 | SW | 0 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|-----------------------------------|-----------|------------------------|-----------------|
| IW-1 - Single Skin Brick | | 39.00 | No insulation |
| IW-2 - Cavity brick, plasterboard | | 21.00 | No Insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|-------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab on Ground 100mm | 26.80 | None | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Concrete Slab on Ground 100mm | 4.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab on Ground 100mm | 5.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom | Concrete Slab on Ground 100mm | 12.60 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 10 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |

| Location | Quantity | Type | Diameter (mm) | Sealed/unsealed |
|----------------|----------|------------------|----------------|-----------------|
| Kitchen/Living | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom | 1 | 1400 |

Roof type

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

Explanatory notes

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

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

Glossary

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500910-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH3-U3, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 63.0 |
| Unconditioned* | 7.0 |
| Total | 70.0 |
| Garage | 0.0 |

NatHERS climate zone 56



Accredited assessor

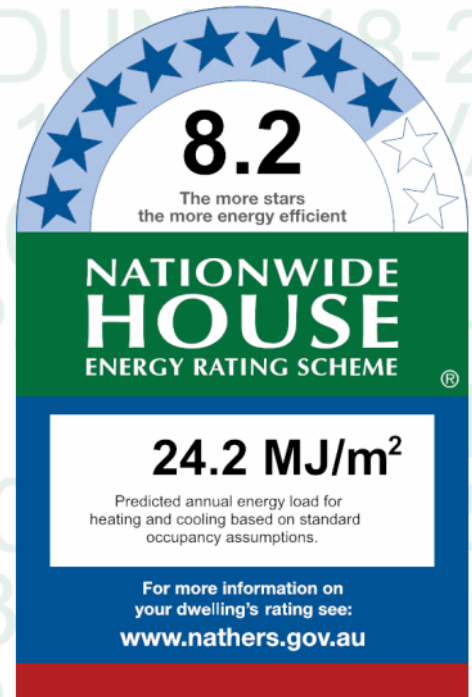
Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|----------------------------------|----------------------------------|
| 13.1 MJ/m ² | 11.1 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=aWmpsBFhH. When using either link, ensure you are visiting hstar.com.au



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|-----------------------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-001-01 A | ALM-001-01 A Aluminium A SG Clear | 6.7 | 0.57 | 0.54 | 0.60 |
| ALM-002-01 A | ALM-002-01 A Aluminium B SG Clear | 6.7 | 0.70 | 0.66 | 0.73 |

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |
| Kitchen/Living | ALM-002-01 A | n/a | 2400 | 2400 | n/a | 45 | NW | No |
| Bedroom 1 | ALM-002-01 A | n/a | 1600 | 1800 | n/a | 45 | NW | No |
| Bath | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Bedroom 2 | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---------------------------------------|-----------------------|
| EW-1 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |
| EW-2 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 7800 | NE | 0 | NO |
| Kitchen/Living | EW-1 | 2700 | 3995 | NW | 2700 | YES |
| Bedroom 1 | EW-2 | 2700 | 3695 | SW | 0 | NO |
| Bedroom 1 | EW-2 | 2700 | 4100 | NW | 400 | NO |
| Bedroom 1 | EW-2 | 2700 | 2100 | NE | 4000 | YES |
| Bath | EW-2 | 2700 | 2990 | SW | 0 | NO |
| Bedroom 2 | EW-2 | 2700 | 3195 | SW | 0 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|---|-----------|------------------------|-----------------|
| IW-1 - Cavity brick, plasterboard | | 22.00 | No Insulation |
| IW-2 - Cavity wall, direct fix plasterboard, single gap | | 55.00 | No insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|---------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 33.70 | None | No Insulation | Ceramic Tiles 8mm |
| Hallway | Concrete Slab, Unit Below 150mm | 3.60 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 14.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Concrete Slab, Unit Below 150mm | 6.70 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2 | Concrete Slab, Unit Below 150mm | 11.10 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 16 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Hallway | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom 1 | 1 | 1400 |
| Bedroom 2 | 1 | 1400 |

Roof type

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|-----------------|--|-------------------|------------|
| Corrugated Iron | Bulk, Reflective Side Down, Anti-glare Up R1.7 | 0.30 | Light |

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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Glossary

| | |
|---|--|
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| 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. |
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| Opening percentage | the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. |
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| 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. |
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| 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. 0008500928-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH3-U4, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|-----------------------------|
| Conditioned* 44.0 | Suburban |
| Unconditioned* 6.0 | NatHERS climate zone |
| Total 50.0 | 56 |
| Garage 0.0 | |



Accredited assessor

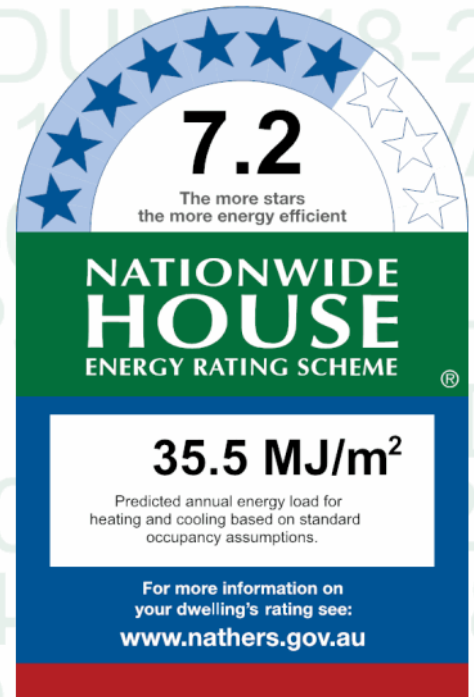
Name John Boutros
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Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|----------------------------------|----------------------------------|
| 22.1 MJ/m ² | 13.4 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=hFQhfaAKT.

When using either link, ensure you are visiting hstar.com.au





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

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

Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|-----------|--------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |

No Data Available

Window and glazed door schedule

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 1500 | 1700 | n/a | 45 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 2400 | 2400 | n/a | 45 | SE | No |
| Kitchen/Living | ALM-004-01 A | n/a | 1200 | 1700 | n/a | 45 | SW | No |
| Bath | ALM-003-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |
| Bedroom | ALM-004-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---------------------------------------|-----------------------|
| EW-1 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |

External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 4195 | NE | 400 | NO |
| Kitchen/Living | EW-1 | 2700 | 6700 | SE | 2300 | NO |
| Kitchen/Living | EW-1 | 2700 | 4195 | SW | 0 | YES |
| Kitchen/Living | EW-1 | 2700 | 1295 | NW | 2700 | NO |
| Kitchen/Living | EW-1 | 2700 | 600 | NE | 3000 | YES |
| Bath | EW-1 | 2700 | 2195 | NW | 3300 | YES |
| Bath | EW-1 | 2700 | 2795 | NE | 400 | NO |
| Bedroom | EW-1 | 2700 | 600 | SE | 0 | YES |
| Bedroom | EW-1 | 2700 | 3400 | SW | 0 | NO |
| Bedroom | EW-1 | 2700 | 3795 | NW | 2700 | NO |

Internal wall *type*

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|---|-----------|------------------------|-----------------|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 39.00 | No insulation |

Floor *type*

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|---------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 26.90 | None | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 4.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab, Unit Below 150mm | 5.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom | Concrete Slab, Unit Below 150mm | 12.60 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling *type*

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 10 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Kitchen/Living | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom | 1 | 1400 |

Roof type

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|-----------------|--|-------------------|------------|
| Corrugated Iron | Bulk, Reflective Side Down, Anti-glare Up R1.7 | 0.30 | Light |

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.

Accredited assessors

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

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

Glossary

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

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500936-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH4-U1, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|-----------------------------|
| Conditioned* 63.0 | Suburban |
| Unconditioned* 7.0 | NatHERS climate zone |
| Total 70.0 | 56 |
| Garage 0.0 | |



Accredited assessor

Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763

Assessor Accrediting Organisation

Design Matters National

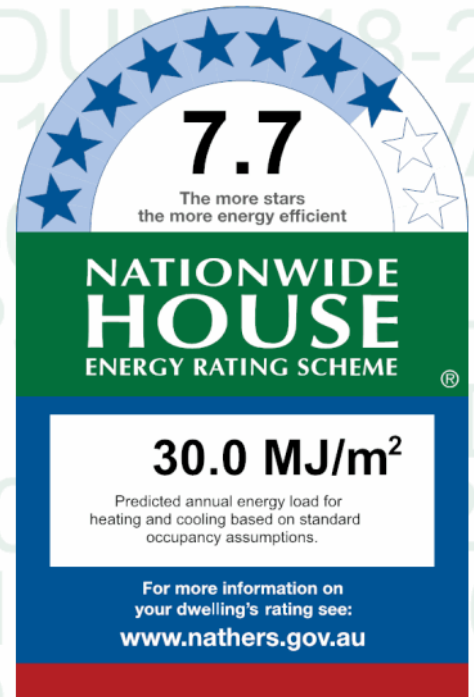
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|----------------------------------|---------------------------------|
| 24.5 MJ/m ² | 5.5 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=ekdcxkYdv. When using either link, ensure you are visiting hstar.com.au



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|-----------------------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | ALM-002-01 A Aluminium B SG Clear | 6.7 | 0.70 | 0.66 | 0.73 |
| ALM-001-01 A | ALM-001-01 A Aluminium A SG Clear | 6.7 | 0.57 | 0.54 | 0.60 |

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-002-01 A | n/a | 2400 | 2400 | n/a | 45 | NW | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Kitchen/Living | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |
| Bedroom 1 | ALM-002-01 A | n/a | 1600 | 1800 | n/a | 45 | NW | No |
| Bath | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |
| Bedroom 2 | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---|-----------------------|
| EW-1 | Cavity Brick | 0.30 | Light | Foil, Anti-glare one side, Reflective other | Yes |
| EW-2 | Cavity Brick | 0.50 | Medium | Foil, Anti-glare one side, Reflective other | Yes |
| EW-3 | Cavity Brick | 0.30 | Light | Foil, Anti-glare one side, Reflective other | Yes |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 3945 | NW | 2700 | YES |
| Kitchen/Living | EW-2 | 2700 | 7800 | SW | 0 | NO |
| Bedroom 1 | EW-3 | 2700 | 2100 | SW | 4000 | YES |
| Bedroom 1 | EW-1 | 2700 | 4100 | NW | 400 | NO |
| Bedroom 1 | EW-3 | 2700 | 3645 | NE | 0 | NO |
| Bath | EW-3 | 2700 | 2890 | NE | 300 | NO |
| Bedroom 2 | EW-3 | 2700 | 3145 | NE | 300 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|-----------------------------------|-----------|------------------------|-----------------|
| IW-1 - Single Skin Brick | | 55.00 | No insulation |
| IW-2 - Cavity brick, plasterboard | | 22.00 | No Insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|-------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab on Ground 100mm | 33.60 | None | No Insulation | Ceramic Tiles 8mm |
| Hallway | Concrete Slab on Ground 100mm | 3.50 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab on Ground 100mm | 14.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Concrete Slab on Ground 100mm | 6.70 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2 | Concrete Slab on Ground 100mm | 11.00 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

| Location | Construction material/type | Bulk insulation R-value (may include edge batt values) | Reflective wrap* |
|-----------|----------------------------|---|------------------|
| Bedroom 2 | Concrete, Plasterboard | No insulation | No |

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 16 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Hallway | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom 1 | 1 | 1400 |
| Bedroom 2 | 1 | 1400 |

Roof type

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

Explanatory notes

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|---|--|
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| 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. |
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Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500944-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH4-U2, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 44.0 |
| Unconditioned* | 6.0 |
| Total | 50.0 |
| Garage | 0.0 |

NatHERS climate zone 56



Accredited assessor

Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763

Assessor Accrediting Organisation

Design Matters National

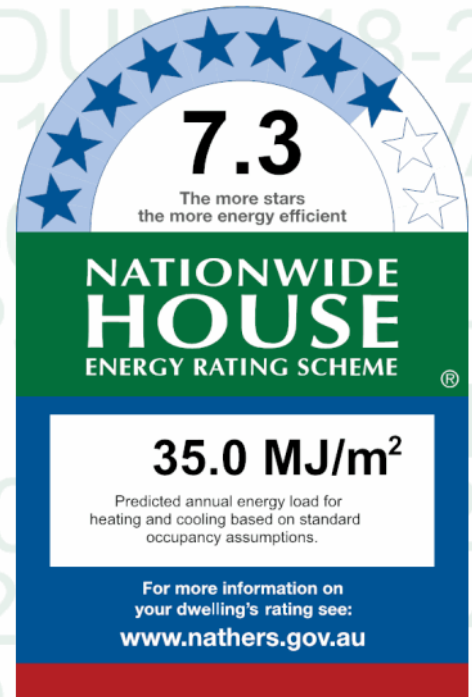
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|----------------------------------|---------------------------------|
| 30.7 MJ/m ² | 4.3 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=UGHuOLAYU. When using either link, ensure you are visiting hstar.com.au



Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|---|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-004-03 A | ALM-004-03 A Aluminium B DG Air Fill High Solar Gain low-E -Clear | 4.3 | 0.53 | 0.50 | 0.56 |
| ALM-003-03 A | ALM-003-03 A Aluminium A DG Air Fill High Solar Gain low-E -Clear | 4.3 | 0.47 | 0.45 | 0.49 |

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-03 A | n/a | 1200 | 1700 | n/a | 45 | NE | No |
| Kitchen/Living | ALM-004-03 A | n/a | 2400 | 2400 | n/a | 45 | SE | No |
| Kitchen/Living | ALM-004-03 A | n/a | 1500 | 1700 | n/a | 45 | SW | No |
| Bath | ALM-003-03 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Bedroom | ALM-004-03 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |

Roof window *type and performance*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

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

Skylight *type and performance*

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight *schedule*

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

External door *schedule*

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---|-----------------------|
| EW-1 | Cavity Brick | 0.30 | Light | Foil Sided Bubble Wrap, Anti-glare one side | No |
| EW-2 | Cavity Brick | 0.30 | Light | Foil Sided Bubble Wrap, Anti-glare one side | No |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 4345 | NE | 400 | YES |
| Kitchen/Living | EW-2 | 2700 | 6700 | SE | 2300 | NO |
| Kitchen/Living | EW-1 | 2700 | 4045 | SW | 0 | NO |
| Bath | EW-1 | 2700 | 2845 | SW | 0 | NO |
| Bedroom | EW-1 | 2700 | 3200 | NE | 400 | NO |
| Bedroom | EW-1 | 2700 | 600 | SE | 1600 | YES |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|-----------------------------------|-----------|------------------------|-----------------|
| IW-1 - Single Skin Brick | | 39.00 | No insulation |
| IW-2 - Cavity brick, plasterboard | | 21.00 | No Insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|-------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab on Ground 100mm | 27.20 | None | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Concrete Slab on Ground 100mm | 4.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab on Ground 100mm | 6.10 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom | Concrete Slab on Ground 100mm | 11.80 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 10 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Kitchen/Living | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom | 1 | 1400 |

Roof type

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

Explanatory notes

About this report

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

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

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

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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 10m e.g. city and industrial areas. |
| Horizontal shading feature | provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels. |
| National Construction Code (NCC) Class | the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au . |
| Opening percentage | the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations. |
| Provisional value | an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au |
| Reflective wrap (also known as foil) | can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties. |
| Roof window | for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser. |
| Shading device | a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves. |
| Shading features | includes neighbouring buildings, fences, and wing walls, but excludes eaves. |
| Solar heat gain coefficient (SHGC) | the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits. |
| Skylight (also known as roof lights) | for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level. |
| U-value | the rate of heat transfer through a window. The lower the U-value, the better the insulating ability. |
| Unconditioned | a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions. |
| Vertical shading features | provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees). |

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0008500951-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH4-U3, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|-----------------------------|
| Conditioned* 63.0 | Suburban |
| Unconditioned* 7.0 | NatHERS climate zone |
| Total 70.0 | 56 |
| Garage 0.0 | |



Accredited assessor

Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763

Assessor Accrediting Organisation

Design Matters National

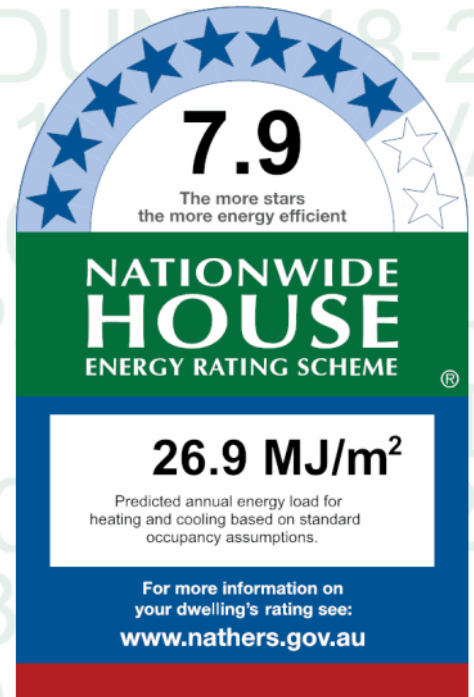
Declaration of interest Declaration completed: no conflicts

National Construction Code (NCC) requirements

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



Thermal performance

| Heating | Cooling |
|----------------------------------|----------------------------------|
| 14.9 MJ/m ² | 12.0 MJ/m ² |

About the rating

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Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=cHjGWbTIm. When using either link, ensure you are visiting hstar.com.au





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|--------------|-----------------------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |
| ALM-002-01 A | ALM-002-01 A Aluminium B SG Clear | 6.7 | 0.70 | 0.66 | 0.73 |
| ALM-001-01 A | ALM-001-01 A Aluminium A SG Clear | 6.7 | 0.57 | 0.54 | 0.60 |

Custom* windows

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

Window and glazed door *schedule*

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-002-01 A | n/a | 2400 | 2400 | n/a | 45 | NW | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Kitchen/Living | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | SW | No |
| Bedroom 1 | ALM-002-01 A | n/a | 1600 | 1800 | n/a | 45 | NW | No |
| Bath | ALM-001-01 A | n/a | 600 | 1700 | n/a | 30 | NE | No |
| Bedroom 2 | ALM-002-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---------------------------------------|-----------------------|
| EW-1 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |
| EW-2 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |

External wall schedule

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 3995 | NW | 2600 | YES |
| Kitchen/Living | EW-1 | 2700 | 7800 | SW | 0 | NO |
| Bedroom 1 | EW-2 | 2700 | 2100 | SW | 4000 | YES |
| Bedroom 1 | EW-2 | 2700 | 4100 | NW | 400 | NO |
| Bedroom 1 | EW-2 | 2700 | 3695 | NE | 0 | NO |
| Bath | EW-2 | 2700 | 2990 | NE | 300 | NO |
| Bedroom 2 | EW-2 | 2700 | 3195 | NE | 300 | NO |

Internal wall type

| Wall ID | Wall type | Area (m ²) | Bulk insulation |
|---|-----------|------------------------|-----------------|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 55.00 | No insulation |
| IW-2 - Cavity brick, plasterboard | | 22.00 | No Insulation |

Floor type

| Location | Construction | Area (m ²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|---------------------------------|------------------------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 33.70 | None | No Insulation | Ceramic Tiles 8mm |
| Hallway | Concrete Slab, Unit Below 150mm | 3.60 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 1 | Concrete Slab, Unit Below 150mm | 14.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |
| Bath | Concrete Slab, Unit Below 150mm | 6.70 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom 2 | Concrete Slab, Unit Below 150mm | 11.10 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling type

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 16 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Hallway | 2 | Downlights - LED | 150 | Sealed |
| Bedroom 1 | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom 2 | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom 1 | 1 | 1400 |

Roof type

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|-----------------|--|-------------------|------------|
| Corrugated Iron | Bulk, Reflective Side Down, Anti-glare Up R1.7 | 0.30 | Light |

Explanatory notes

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Glossary

| | |
|---|--|
| Annual energy load | the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions. |
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| 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. |
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| Exposure category – open | terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors). |
| Exposure category – suburban | terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas. |
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| 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. 0008500969-01

Generated on 31 Mar 2023 using BERS Pro v4.4.1.5d (3.21)

Property

Address Unit MH4-U4, 18-28 Simpson St, Dundas Valley, NSW, 2117
Lot/DP 1707/31846
NCC Class* 2
Type New Dwelling

Plans

Main Plan Rev. P6
Prepared by Kennedy Associates Architects

Construction and environment

| Assessed floor area (m ² *) | Exposure Type |
|--|---------------|
| Conditioned* | 44.0 |
| Unconditioned* | 6.0 |
| Total | 50.0 |
| Garage | 0.0 |

| NatHERS climate zone |
|----------------------|
| Suburban |
| 56 |



Accredited assessor

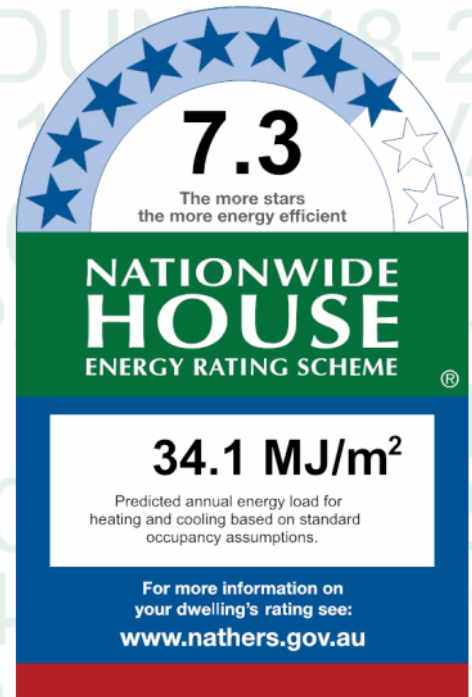
Name John Boutros
Business name Greenworld Architectural Drafting
Email greenworldarchi@outlook.com
Phone 02 9652 0045
Accreditation No. DMN/16/1763
Assessor Accrediting Organisation Design Matters National
Declaration of interest Declaration completed: no conflicts

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.



Thermal performance

| Heating | Cooling |
|---------------------------|---------------------------|
| 17.3 MJ/m ² | 16.8 MJ/m ² |

About the rating

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

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=RkXcCZYP.

When using either link, ensure you are visiting hstar.com.au





Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

I have modeled the shading in accordance with NatHERS principles

Window and glazed door type and performance

Default* windows

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

Custom* windows

| Window ID | Window Description | Maximum U-value* | SHGC* | Substitution tolerance ranges | |
|-----------|--------------------|------------------|-------|-------------------------------|------------------|
| | | | | SHGC lower limit | SHGC upper limit |

No Data Available

Window and glazed door schedule

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 1200 | 1700 | n/a | 45 | NE | No |

| Location | Window ID | Window no. | Height (mm) | Width (mm) | Window type | Opening % | Orientation | Window shading device* |
|----------------|--------------|------------|-------------|------------|-------------|-----------|-------------|------------------------|
| Kitchen/Living | ALM-004-01 A | n/a | 2400 | 2400 | n/a | 45 | SE | No |
| Kitchen/Living | ALM-004-01 A | n/a | 1500 | 1700 | n/a | 45 | SW | No |
| Bath | ALM-003-01 A | n/a | 600 | 1700 | n/a | 30 | SW | No |
| Bedroom | ALM-004-01 A | n/a | 1400 | 1700 | n/a | 45 | NE | No |

Roof window type and performance

Default* roof windows

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

Custom* roof windows

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

Roof window schedule

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

Skylight type and performance

| Skylight ID | Skylight description |
|-------------------|----------------------|
| No Data Available | |

Skylight schedule

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

External door schedule

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

External wall type

| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|
|---------|-----------|-------------------|---------------------|---------------------------|-----------------------|



| Wall ID | Wall type | Solar absorptance | Wall shade (colour) | Bulk insulation (R-value) | Reflective wall wrap* |
|---------|--------------|-------------------|---------------------|---------------------------------------|-----------------------|
| EW-1 | Brick Veneer | 0.30 | Light | Anti-glare foil with bulk no gap R2.5 | No |

External wall *schedule*

| Location | Wall ID | Height (mm) | Width (mm) | Orientation | Horizontal shading feature* maximum projection (mm) | Vertical shading feature (yes/no) |
|----------------|---------|-------------|------------|-------------|---|-----------------------------------|
| Kitchen/Living | EW-1 | 2700 | 4395 | NE | 0 | YES |
| Kitchen/Living | EW-1 | 2700 | 6700 | SE | 2400 | NO |
| Kitchen/Living | EW-1 | 2700 | 4195 | SW | 0 | NO |
| Kitchen/Living | EW-1 | 2700 | 600 | SW | 3100 | YES |
| Kitchen/Living | EW-1 | 2700 | 1295 | NW | 3400 | NO |
| Bath | EW-1 | 2700 | 2795 | SW | 0 | NO |
| Bath | EW-1 | 2700 | 2195 | NW | 4000 | YES |
| Bedroom | EW-1 | 2700 | 3795 | NW | 3400 | NO |
| Bedroom | EW-1 | 2700 | 3200 | NE | 400 | NO |
| Bedroom | EW-1 | 2700 | 600 | SE | 2200 | YES |

Internal wall *type*

| Wall ID | Wall type | Area (m²) | Bulk insulation |
|---|-----------|-----------|-----------------|
| IW-1 - Cavity wall, direct fix plasterboard, single gap | | 39.00 | No insulation |

Floor *type*

| Location | Construction | Area (m²) | Sub-floor ventilation | Added insulation (R-value) | Covering |
|----------------|---------------------------------|-----------|-----------------------|----------------------------|-----------------------------|
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 27.50 | None | No Insulation | Ceramic Tiles 8mm |
| Kitchen/Living | Concrete Slab, Unit Below 150mm | 4.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bath | Concrete Slab, Unit Below 150mm | 5.90 | None | No Insulation | Ceramic Tiles 8mm |
| Bedroom | Concrete Slab, Unit Below 150mm | 11.90 | None | No Insulation | Carpet+Rubber Underlay 18mm |

Ceiling *type*

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

Ceiling penetrations*

| Location | Quantity | Type | Diameter (mm ²) | Sealed/unsealed |
|----------------|----------|------------------|-----------------------------|-----------------|
| Kitchen/Living | 10 | Downlights - LED | 150 | Sealed |
| Kitchen/Living | 1 | Exhaust Fans | 300 | Sealed |
| Kitchen/Living | 4 | Downlights - LED | 150 | Sealed |
| Bath | 4 | Downlights - LED | 150 | Sealed |
| Bath | 1 | Exhaust Fans | 300 | Sealed |
| Bedroom | 4 | Downlights - LED | 150 | Sealed |

Ceiling fans

| Location | Quantity | Diameter (mm) |
|----------------|----------|---------------|
| Kitchen/Living | 1 | 1400 |
| Bedroom | 1 | 1400 |

Roof type

| Construction | Added insulation (R-value) | Solar absorptance | Roof shade |
|-----------------|--|-------------------|------------|
| Corrugated Iron | Bulk, Reflective Side Down, Anti-glare Up R1.7 | 0.30 | Light |

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

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

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

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

Glossary

| | |
|---|--|
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