

ADVERTISED PLAN



SUSTAINABLE DESIGN ASSESSMENT

Client: EDK Development

Project: 16 Murray Street, Elsternwick

Subject: Sustainable Design Assessment

Date: 26/05/2026

Project Number: GIW24194

Revision: E

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Introduction

The following Sustainable Design Assessment (SDA) has been prepared for the proposed multi-residential development at 16 Murray Street, Elsternwick. This assessment responds to City of Glen Eira Planning Scheme - Clause 15.01-2L-02 Environmentally Sustainable Development and Victoria Planning Provisions VC216 – 15.01-2S.

The development has been assessed using the Built Environment Sustainability Scorecard (BESS) tool. The BESS tool addresses nine key environmental categories as follows:

- Management
- Water
- Energy
- Stormwater
- IEQ
- Transport
- Waste
- Urban Ecology
- Innovation

Sources of Information

The Sustainable Design Assessment (SDA) is based on the following documentation:

Architectural Drawings by:

Job/Project No:

Drawing No:

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Revision History

Revision Number	Date Issued	Author	Approved	Comments
A	05/02/2026	CDW	IB	Draft
B	17/02/2026	CDW	IB	Draft
C	18/02/2026	CDW	IB	Final
D	24/03/2026	CDW	IB	Final
E	26/05/2026	CDW	IB	Final

Prepared by:
Project Consultant

Approved by:
Associate Director

Senior ESD Consultant
B.BSc. (Building Science)

B.Sc (Science, Business and Innovation)
M.Sc (Sustainable Development)

Great Design Fast Track

The proposed development at 16 Murray Street, Elsternwick will be submitted to the Department of Transport and Planning (DTP) under the Great Design Fast Track approval pathway. This entails a suitable response to the 7 design principles including: neighbourly, welcoming, landscaped, sustainable, healthy, adaptable and good value homes. This Sustainable Management Plan responds specifically to principle 5: Sustainable Homes.

Mandatory Requirements

The following mandatory requirements are met by the development:

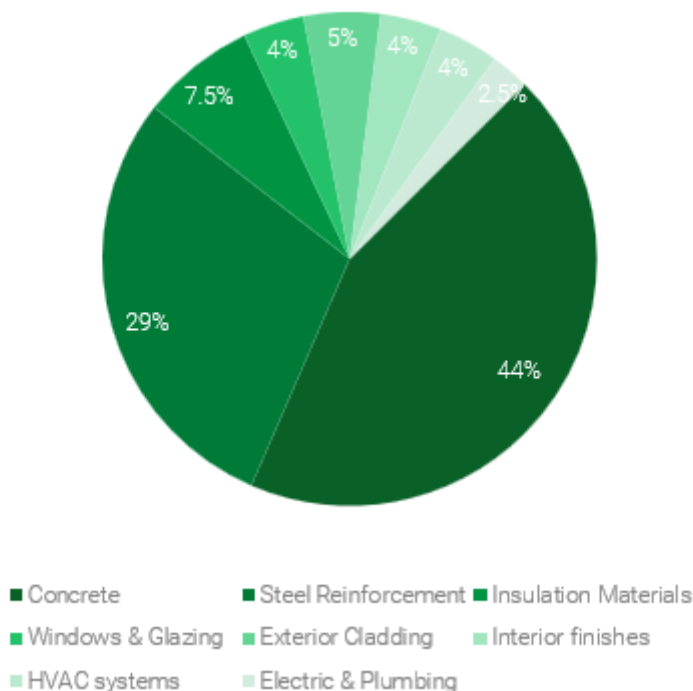
Mandatory requirement	Design Response
An average Nationwide House Energy Rating Scheme (NatHERS) rating of at least 8.0 stars, and no less than 6.5 stars for an individual apartment. Townhouses must achieve a NatHERS rating of no less than 7.5 stars.	The apartments are currently achieving an 8.0 Star average with no unit below 6.5 Stars. The representative sample ratings demonstrate the development's ability to achieve these requirements. Refer Appendix B for Preliminary FirstRate Certificates.
All dwellings proposed need to provide effective natural ventilation, which includes cross ventilation, single sided ventilation or mechanically assisted ventilation.	100% of the development's apartments are effectively naturally ventilated. Refer BESS IEQ.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Sustainable Homes Principle 01

Lifecycle Decarbonisation

Lifecycle decarbonization involves systematically reducing or eliminating carbon emissions across all phases of a building's lifespan - from material extraction and construction through operation to eventual demolition and material recovery. The main focus of the proposed initiatives will be on reducing embodied carbon as the remaining phases will be suitably addressed in principle 2-6.



Embodied Carbon

A typical mid-rise mixed-use development in Melbourne, Australia has an embodied carbon footprint of 420-450kgCO₂/m².

More than half of the embodied carbon is associated with the structural components (concrete and structural steel) of the development.

GDFT Initiatives

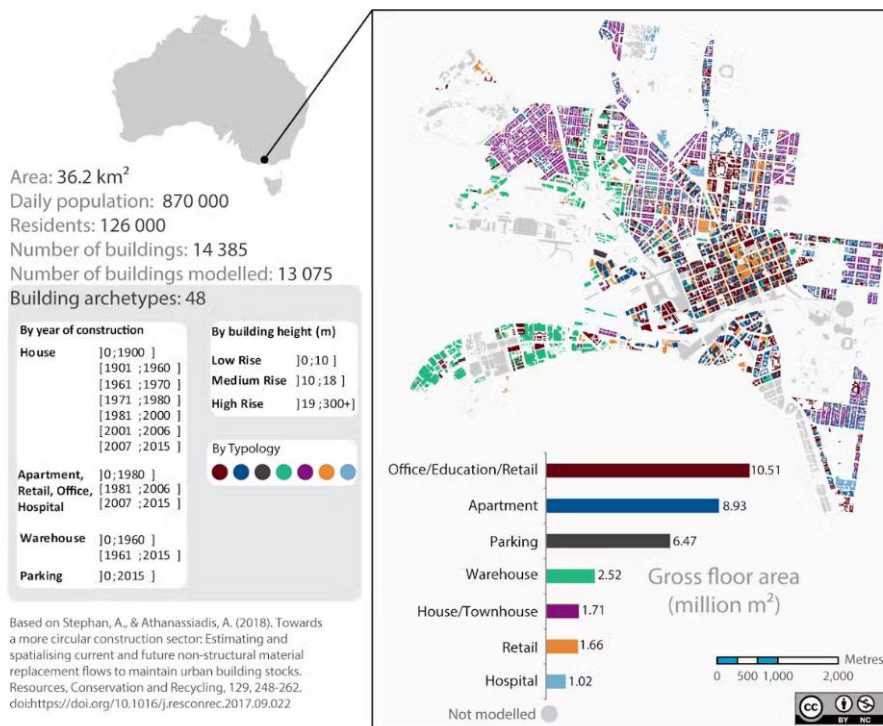
- Reducing the volume high embodied carbon materials, such as steel, by limiting metal finishes.
- The development is all electric and supports the transition to zero carbon homes with no fossil fuels being burnt on site.
- Where timber is to be used, such timbers are to be FSC and / or PEFC certified.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Sustainable Homes Principle 02

Material Circularity

Material circularity focuses on designing buildings as material banks that can continuously contribute resources to the urban economy rather than prematurely becoming waste at end-of-building-life. Through the creation of circular material flows, both within the building and the wider environment, the use of virgin materials will be reduced as well as associated greenhouse gas emissions.



Urban Mining

Based on Research conducted by Melbourne University on a sample set of 13,075 case studies, City of Melbourne has a stock of 1.5 million tonnes of materials in every square kilometre. Replacing worn materials to maintain this built stock is estimated to require 26 thousand tonnes of materials every year.

GDFT Initiatives

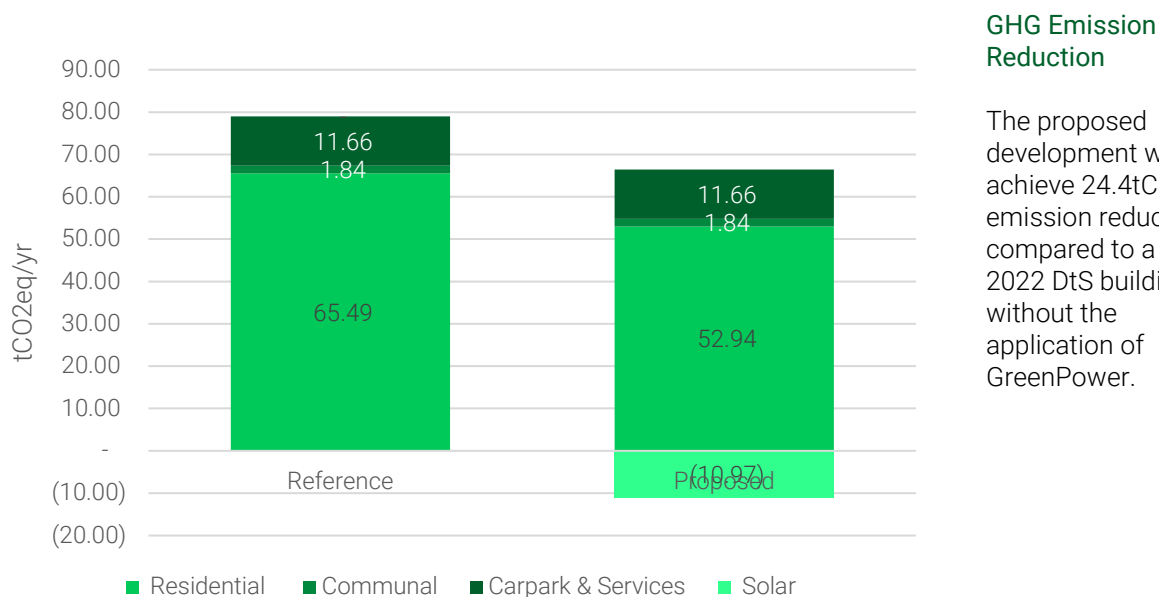
- Supporting the circular economy by using structural steel with industry best practice recycled content.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Sustainable Homes Principle 03

Net-Positive Energy

Net-positive energy is achieved by designing buildings that generate more renewable energy than they consume annually, contributing excess clean energy back to Victoria's electricity grid while achieving carbon neutrality in operations.



GDFT Initiatives

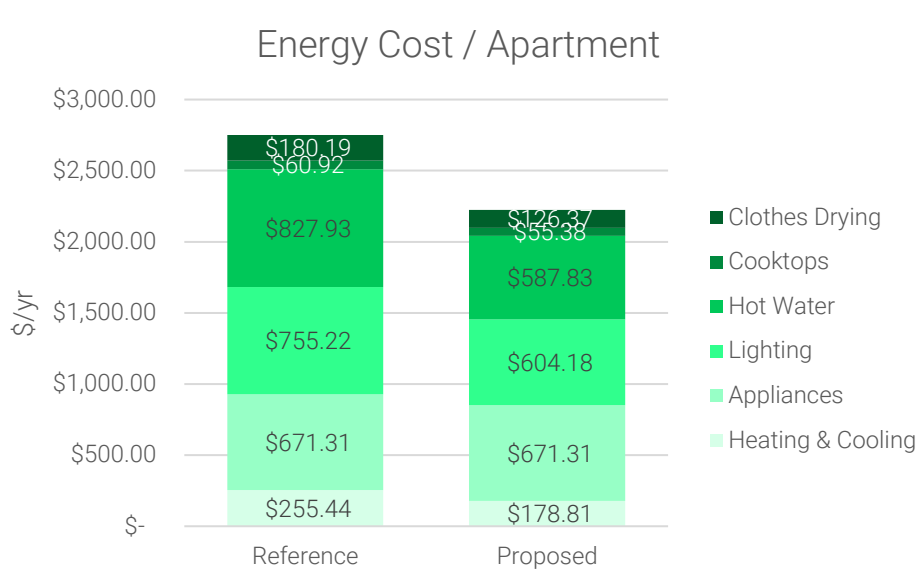
- A 10kWp PV array will reduce the developments electricity demand and reduce operational carbon emissions.
- Air conditioning systems are to be within 1 star rating of best available unit of the same capacity under MEPS 2019.
- No fossil fuels are burnt on-site avoiding additional operation carbon emissions.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Sustainable Homes Principle 04

High-Performing Thermal Envelope

Combining appropriate passive design responses with a highly efficient thermal envelope will result in significant energy and cost saving for end-users. This will be carefully balanced to meet the provision of best practice daylight amenity and thermal comfort.



Energy Cost Reduction

On average occupants will save \$527 on an annual basis on their energy expenses compared to a NCC 2022 DtS reference scenario.

GDFT Initiatives

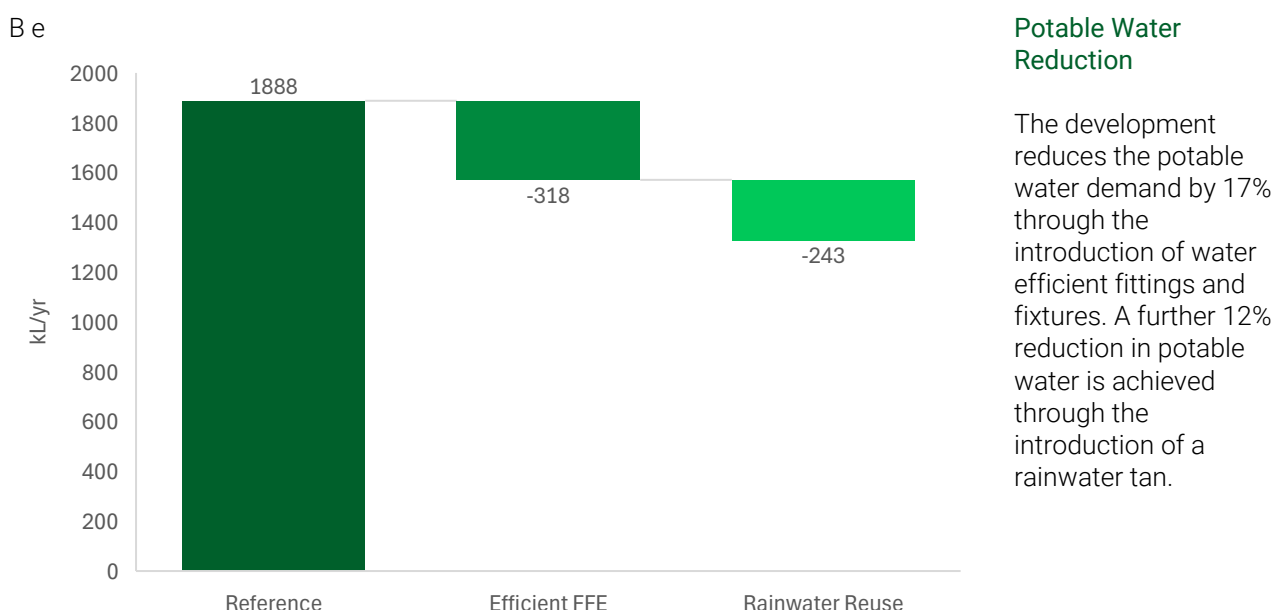
- Energy efficient design achieving an average of 8 star NatHERS rating, with no unit below 6.5 stars, reducing heating and cooling demand. The increased thermal performance makes the homes more comfortable to live and cost less to operate.
- A balanced shading strategy including: balcony overhangs, horizontal shades and window dormer windows has been adopted to limit summer solar heat gains.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Sustainable Homes Principle 05

Water Resilience

Integrating water systems that suitably respond to Melbourne's current and future climate, will future-proof the development and assist in creating a resilient urban water system. The inclusion of stormwater management systems, efficient fittings and fixtures and low-water demand / native vegetation will significantly reduce the potable water demand of developments and reduce pressure on the local water systems.



GDFT Initiatives

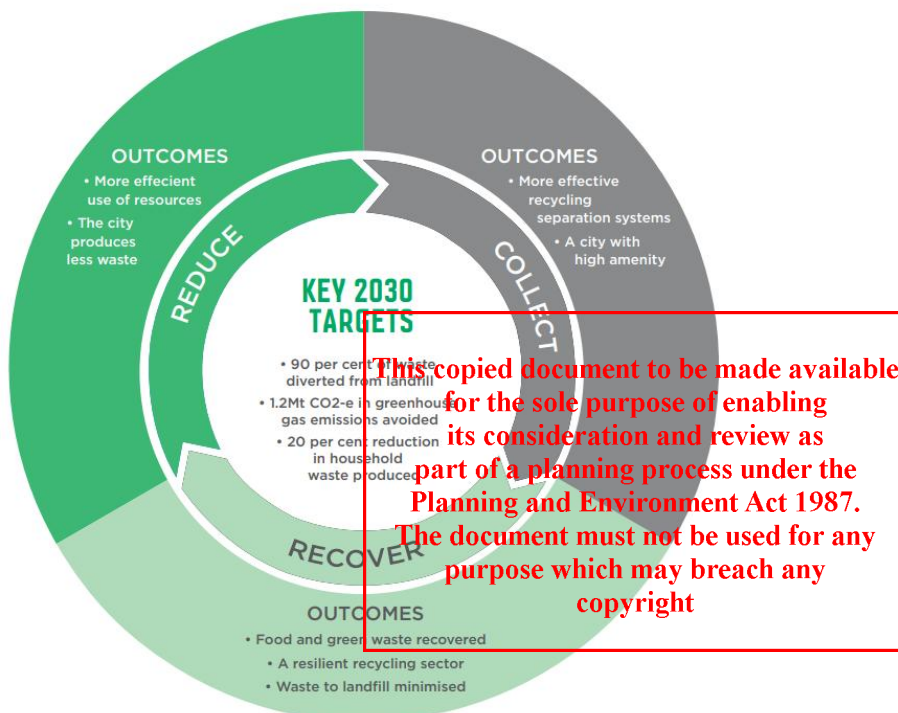
- Each home will be fitted with water efficient fixtures and fittings.
- 18,000 litre rainwater water tank will collect rainwater from the roof which is be used to provide water to all WCs and irrigate the landscaping.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Sustainable Homes Principle 06

No Waste to Landfill

The inclusion of comprehensive waste reduction, diversion and collection strategies that support contractors, occupants and tenants to successfully divert generated waste from landfill will reduce the environmental impact and operational cost of waste management. With the eventual aim to create systems that are equipped to support zero waste operations and a circular economy.



Waste and Resource Recovery Strategy 2030

City of Melbourne has devised a strategy to produce less waste and maximises the life of materials through reuse, recycling and recovery - working towards a circular economy.

The focus of the strategy is centred around three pillars: reduce, collect and recover. With the end goal of achieving their key 2030 targets.

GDFT Initiatives

- Waste generated on site from demolition and construction activities will be sorted and diverted to their relevant waste streams to be recycled or reused. The development is targeting the diversion of 80% it's demolition and construction waste from landfill.
- The development will provide dedicated waste bins for general, recycling, green, and glass waste to support effective waste separation and minimise landfill contribution. Clearly labelled and conveniently located, these bins will promote responsible waste management practices among residents and users.
- Kitchen joinery is to provide appropriate spatial allowance for food and organics, general and recycling waste collection.

ESD Assessment

The project achieves a total BESS score of 70% with no mandatory category (IEQ, Energy, Water, Stormwater) below 50%. This figure represents a percentage improvement over a benchmark project. A score of 50% and higher equates to 'best practice' and is an effective pass of the BESS tool. A score of 70% and higher equates to BESS 'excellence' and exists as a higher benchmark in the tool.

The following ESD initiatives will be implemented in the proposed development at 16 Murray Street, Elsternwick. All initiatives are to be suitably incorporated in the project documentation i.e. architectural, landscape, hydraulics and civil engineering.

BESS Category	ESD Initiatives
Management	- A Building User's Guide will be provided to the residents explaining the correct use of installed fittings and fixtures, equipment and building systems. - Individual electricity and cold water metering is to be provided to each apartment and common areas.
Water	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must show heads for any WEPS 4 Star Toilets, WEPS 5 Star Taps, WEPS 4 Star Showerheads, WEPS 5 Star Dishwashers which may breach any copyright - Water efficient fixtures are applied throughout: - WEPS 4 Star Toilets - WEPS 5 Star Taps - WEPS 4 Star Showerheads - WEPS 5 Star Dishwashers - Water collected from the flat and angled roof areas will be directed into an 18,000-litre rainwater tank connected to all WCs and landscape irrigation. Refer Appendix A – WSUD Response.
Energy	- The proposed development will target an average 8.0 Stars NatHERS rating with no unit achieving below 6.5 Stars. Further to this all units will need to comply with the BADS maximum cooling load limit of 30MJ/m². Refer Appendix B – Preliminary Energy Rating results and FirstRate5 Certificates. - The proposed development will be all electric, with no gas connection. - Common area external lighting will be controlled by time clock and PE cell with an override off switch. - Lighting power density shall be as follows: - Dwelling: No greater than average 4W/m² - Veranda/balcony/terrace: No greater than average 3W/m² - Back of house and indoor car parks: No greater than average 5W/m² - Hot water is to be provided via individual electric instantaneous hot water systems.

BESS Category	ESD Initiatives
	- Inverter split system units are to be installed and sized to maintain conditions of the main living areas. Systems are to be within 1 star of the best available under the post April 2019 Minimum Energy Performance Standards (MEPS). - Private outdoor clotheslines are provided to Apt 01, Apt 02 and Apt 03. - A 10kW Solar PV system will be located on the roof of the proposed development. Refer Appendix C – Renewable Energy - Carpark ventilation fans are driven by a VSD motor connected to CO sensors within the carpark. The inclusion of CO sensor control will allow the ventilation fans to ramp down when the car park is unoccupied. The system is to be designed in accordance with AS1668.2.
Stormwater	A 101% Blue Factor score is achieved. Refer Appendix A – WSUD Response for mark-up of collection and impervious areas, Blue Factor Report and maintenance manual.
IEQ	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The horizontal shades the need for, not purpose which may breach any copyright. - The in-built BESS daylight calculator has been utilised to demonstrate compliance under BESS – IEQ 1.1 and 1.2. - Shading strategy: - Ground floor apartment is shaded by balconies above or fixed horizontal shades on the east, north, west and south facades. - Level 1 habitable rooms at each corner of the building are shaded by the floor above. - Level 2 windows are shaded by the dormer roof. - All of the development's living and bedroom areas are naturally cross-ventilated with windows on opposite or adjacent facades or effectively single sided ventilated.
Transport	12 secure bike parking spaces are located in the basement. 2 visitor bike parking spaces are located at the apartment entrance, and an additional 2 bike parks are provided in the basement. - Future provision for the installation of EV charging stations to all car parking spaces.
Materials	- The design will seek to limit the use of high embodied energy metal finishes. - Concrete mixes used within the project will seek to reduce Portland cement and aggregate content where deemed appropriate by the structural engineer. - The building's steel (by mass) is to be sourced from a Responsible Steel Maker.

BESS Category	ESD Initiatives
	- Where timber is to be used, such timbers are to be FSC or PEFC certified. - Permanent formwork, pipes, flooring, blinds and cables in the project will seek to comply with the following: - Meet the GBCA's Best Practice Guidelines for PVC. or; - The supplier holds a valid ISO140001 certification. - The project will incorporate products that meet the transparency and sustainability requirements where deemed appropriate.
Waste	- Composting / green waste facilities will be provided at basement. - General and recycling waste options will be accessible to all occupants. - Kitchen joinery is to provide appropriate spatial allowance for food and organics, general and recycling waste collection.
Urban Ecology	20% of the development site will be covered by vegetation. 23.2m2 of communal space is provided at the entrance. - The proposed development includes green walls with vertical creepers. - All apartment POS will be provided with an outdoor tap and floor waste.
Innovation	- ESD verification during construction. - IEQ sensors are to be installed to all apartments. The sensors are to measure at a minimum VOC levels, humidity, PPM and temperature.

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Appendices

Appendix A – WSUD Response

Site layout Plan

The following architectural mark-up illustrates the rainwater collection and impervious areas of the proposed development site.

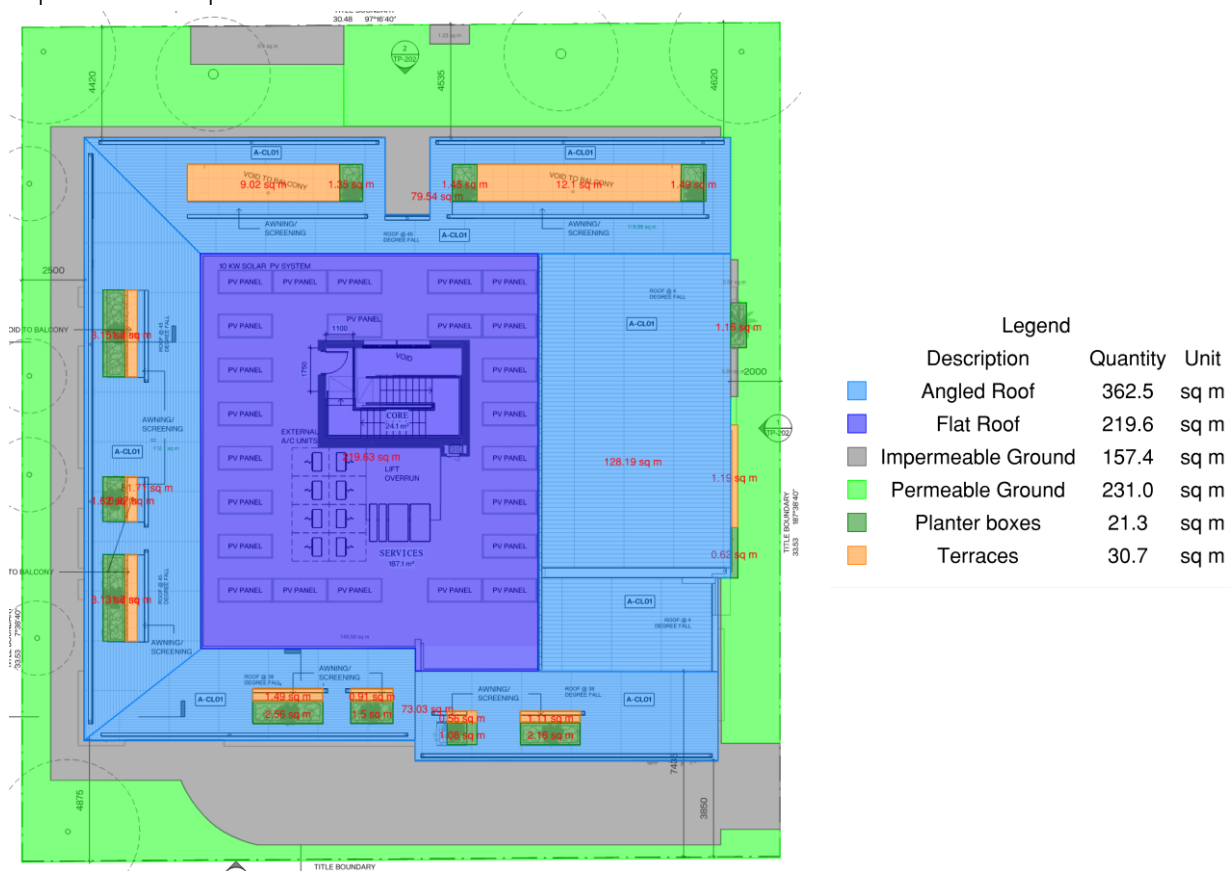


Figure 1 - Mark-up of water catchment and impervious areas

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Blue Factor Rating Report

A Blue Factor rating of $\geq 100\%$ can be achieved by implementing the following initiatives:

- Rainwater collection off the flat and angled roof area is to be directed into an 18,000-litre rainwater tank connected to all WCs and landscape irrigation.

Blue Factor was developed by Microburst Software with support from DEECA. as a method of simplifying the analysis of stormwater treatment methods. The Blue Factor Calculator displays the amount of treatment that is required to meet best practice targets, using WSUD treatment measures. The best practice standards have been set out in the Urban Stormwater Best Practice Environmental Management Guidelines (Victoria Stormwater Committee, 1999) for reduction in total suspended solids (TSS), total phosphorus (TP) and total nitrogen (TN) loads.

The Blue Factor Result is provided below:

Project # 9C4099AD
V3: 16 Murray St Elsternwick
Gary Wertheimer - info@giw.com.au
16 Murray St, Elsternwick VIC 3185, Australia
24 March 2026 7:06 a.m.



16 Murray St Elsternwick

The proposed stormwater treatment provides treatment to meet best practice targets for total suspended solids (TSS), total phosphorus (TP) and total nitrogen (TN) but does not comply with all the relevant objectives for management of stormwater flows on-site.



Project details

Name	V3: 16 Murray St Elsternwick
Project ID	9C4099AD
Street address	16 Murray St, Elsternwick VIC 3185, Australia
Municipality	Glen Eira
Site area	1022 m ²
Planning Number	

Flow and pollutant load reductions

Item	Result	Target	
Mean annual runoff volume harvested or evapotranspired (%)	40%	>27%	✓
Mean annual runoff volume infiltrated or filtered (%)	0%	>9%	✗
Total suspended solids (%)	61%	>80%	✗
Total phosphorus (%)	54%	>45%	✓
Total nitrogen (%)	45%	>45%	✓
Total gross pollutants (%)	75%	>70%	✓

WSUD Strategy

The development will include the provision of an 18,000-litre rainwater tank and associated pump in the basement garage. The rainwater tank is to be connected to all WC's and landscape irrigation.

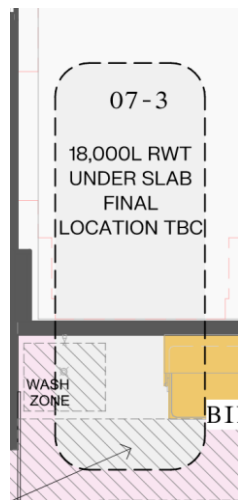


Figure 2 – Location Rainwater Tank

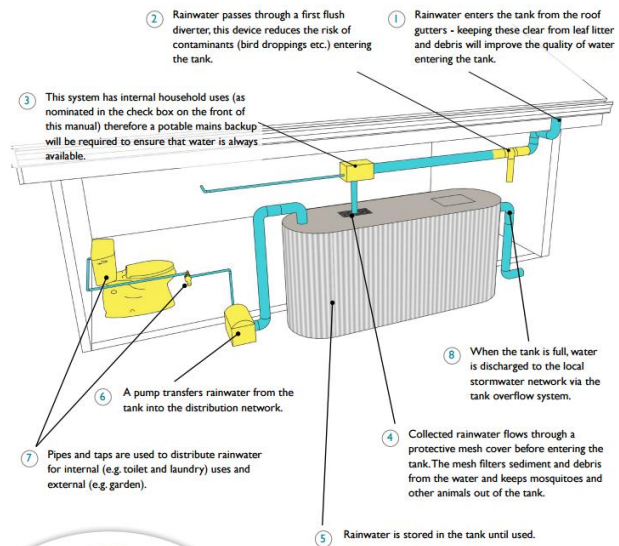


Figure 3 – Cross-section Tank
(City of Port Phillip)

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Rainwater Reuse

Inputs

Catchment Area	582 sqm
Number of Bedrooms	23
Bin Washout	No
Irrigation Area	200 sqm
Tank Capacity	18,000 Litre

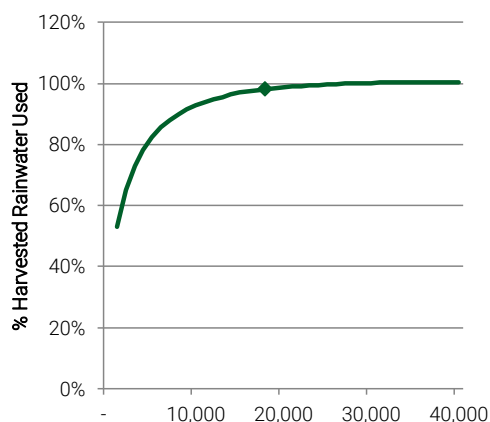
Outputs

% Served by Rainwater	53.5%
% Harvested Rainwater Used	90.6%
Total Potable Water Saved	182,645 Litre

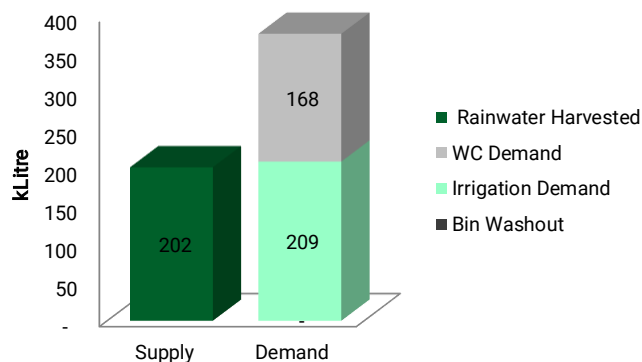
Rainwater Balance (Monthly Averages)

Month	Rainwater Harvested (L)	Irrigation Demand (L)	WC Demand (L)	Bin Washout (L)
Jan	13,486	30,944	14,260	0
Feb	17,118	28,031	12,880	0
Mar	15,461	14,379	14,260	0
Apr	17,038	13,765	13,800	0
May	16,012	14,204	14,260	0
Jun	16,516	6,472	13,800	0
Jul	12,736	6,595	14,260	0
Aug	15,930	6,595	14,260	0
Sep	17,420	18,919	13,800	0
Oct	18,377	19,276	14,260	0
Nov	23,307	18,800	13,800	0
Dec	18,235	31,183	14,260	0
Total	201,635	209,163	167,900	0
Equivalent STORM tool		29		0

Tank Sizing



Supply-Demand



This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Site Management Statement

Prevention of litter, sediments and pollution entering the stormwater system in the construction phase is to be addressed through introduction of the following initiatives:

- Buffer strips to pervert stormwater runoff.
- Gravel sausage filters at stormwater inlets to prevent silt, mud or any other site contaminant from entering the stormwater system.
- Silt fences under grates at surface entry inlets to prevent sediment from entering the stormwater system.
- Temporary rumble grids to vibrate mud and dirt off vehicles prior to leaving the site.
- The site is to be kept clean from any loose rubbish or rubble.
- Introduction of offsite construction for building elements where deemed appropriate.

The builder is to include these initiatives in the construction management plan and address these during site induction of relevant contractors.

Maintenance Program

The following maintenance requirements are to be programmed to ensure the rainwater tank operates effectively:

Item	Description	Maintenance Interval
Gutters and downpipes	Eave and box gutters are to be inspected and cleaned to prevent large debris from being washed into rainwater tank.	3 monthly
First flush system (as applicable)	Inspect and clean excess sediment from diverter chamber to prevent blockages.	3 monthly
Tank contents	Siphon the tank to inspect contents. If sludge is present, a plumber will be required to drain tank contents and clean the tank.	2 to 3 years
Tank structure	Inspect tank externally for leaks	Yearly
Pump system	Inspect pump wiring, plumbing and check for smooth operation.	6 monthly
Plumbing	Plumbing and fixtures connected to the rainwater tank is to be inspected for leaks.	Yearly

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Appendix B – Preliminary Energy Rating Results and FirstRate5 Certificates.

The National Construction Code (NCC) Class 2 – Sole Occupancy Unit(s) residential building component is to be designed in accordance with NCC Section J (2022) NatHERS requirements. The residential units must achieve an average 8.0 Star rating, with no unit achieving below 6.5 Stars.

Further to this the development will need to comply with the following heating and cooling load limits:

Climate Zone	Heating load limits (MJ/m2)	Cooling load limits (MJ/m2)
21 Melbourne RO	Average: 48 Maximum: 55	Maximum: 30 (Table B5-7 - Clause 55)

The apartments are currently achieving an 8.0 Star average. The below sample ratings demonstrate the developments ability to achieve these requirements.

Apartment No.	ACE Total MJ/M ²	ACE Heating	ACE Cooling	ACE NCFA	Star Rating
Apt 1	46.5	22.9	23.6	169	7.8
Apt 3	50.2	27.9	22.3	149.9	7.6
Apt 5	27	13.9	13.1	147.6	8.9
Apt 7	49.7	27.1	22.6	170	7.6
Average	43.4	25.5	17.9	159.1	8.0

Construction assumptions for preliminary FirstRate5 ratings are listed below. Note, these assumptions are based on the sample of apartments assessed and may vary throughout the development. These assumptions are not to be relied upon for any other purpose beyond Town Planning assessment.

Element	Material	Insulation Value
Floor (exposed below and basement below)	Concrete Slab	R3.65
External Walls	Terra-cotta Cladding	R2.7
Internal Walls	Concrete	R2.0
Internal Walls	Plasterboard	R2.5
Roof (exposed above)	Concrete	R2.75
Roof Flat	Concrete	R4.6
Roof Sloped	Timber	R4.2
Fixed Windows	Aluminium framed, Double glazed, Argon filled, Low-E, Clear	Total System: – U-Value: 2.71 – SHGC: 0.58

Element	Material	Insulation Value
Sliding Doors	Aluminium framed, Double glazed, Argon filled, Low-E, Clear	Total System: - U-Value: 3.12 - SHGC: 0.41
Casement Windows/ Doors	Aluminium framed, Double glazed, Argon filled, Low-E, Clear	Total System: - U-Value: 3.60 - SHGC: 0.44
Awning Windows	Aluminium framed, Double glazed, Argon filled, Low-E, Clear	Total System: - U-Value: 4.42 - SHGC: 0.40

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 23 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address Apt 01, 16 Murray Street,
Elsternwick, VIC, 3185

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan 25005/TP102/RevA/010625

Prepared by Studio Mccue

Construction and environment

Assessed floor area [m²]*

Conditioned*	169
Unconditioned*	3.1
Total	172.1
Garage	-

Exposure type suburban

NatHERS climate zone 21 Melbourne RO



Accredited assessor

Name [REDACTED]

Business name GIW Environmental Solutions

Email [REDACTED]

Phone [REDACTED]

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

NCC Requirements

NCC provisions Volume 1

State/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	22.9	23.6
Load limits	55	38

Features determining load limits

Floor type	N/A
(lowest conditioned area)	
NCC climate zone 1 or 2	Y
Outdoor living area	N/A
Outdoor living area ceiling fan	N/A

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit When using either link, ensure you are visiting www.fr5.com.au.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG – Concrete Slab on Ground

SF – Suspended Floor (or a mixture of CSOG and SF)

NA – Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA – not applicable

Outdoor living area:

Yes

No

NA – not applicable

Outdoor living area ceiling fan:

Yes

No

NA – not applicable

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

Energy use:

No Whole of Home performance assessment conducted for this certificate.

Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

No Whole of Home performance assessment conducted for this certificate.

Graph key:



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

Certificate check

The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'External wall type' table on this Certificate?		☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?		☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Floor type' table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NatHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Certificate check

Continued

Approval stage		Construction stage		
Assessor checked	Consent authority/surveyor checked	Builder checked	Consent authority/surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging

Does the dwelling meet the NCC requirement for thermal bridging?

☐ ☐ ☐ ☐

Insulation installation method

Has the insulation been installed according to the NCC requirements?

☐ ☐ ☐

Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?

☐ ☐ ☐ ☐

Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)

Appliances

Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Additional NCC Requirements for Services (not included in the NatHERS assessment)

Does the lighting meet the artificial lighting requirements specified in the NCC?

☐ ☐ ☐ ☐

Does the hot water system meet the additional requirements specified in the NCC?

☐ ☐ ☐ ☐

Provisional values* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?

☐ ☐ ☐ ☐

Other NCC requirements

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

Room schedule

Room	Zone Type	Area [m²]
Shared 1	basementCarPark	562.9
Ensuite	nightTime	8.4
LDRY	unconditioned	3.1
Bath 1	nightTime	5.5
Kitchen/Living	kitchen	71.6
Pntry	dayTime	4.3
Bath2	dayTime	4.8
Bedroom 3	bedroom	13.8
Bedroom 2	bedroom	13.4
WIR	dayTime	14
Master Bedroom	bedroom	16.2
Hallway	dayTime	12.3
Hallway 2	dayTime	4.5

Window and glazed door type and performance

Default* windows

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

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
CAP-057-17 A	Capral 900 Sliding Door DG 6EcAd-12Ar-6EA	3.12	0.41	0.39	0.43
CAP-048-06 A	200 Hinged Door into 400 Narrowline DG DG 6EA-12Ar-6	3.6	0.44	0.42	0.46
CAP-061-06 A	Capral 50 Series Awning in 400 Series DG 6EA-12Ar-6	4.42	0.4	0.38	0.42
CAP-055-52 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6EA	2.71	0.58	0.55	0.61

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	CAP-057-17 A	Opening 19	2960	2069	sliding	45.0	W	No
Kitchen/Living	CAP-048-06 A	Opening 14	2960	1449	casement	90.0	W	No

Kitchen/Living	CAP-057-17 A	Opening 13	2960	3391	sliding	45.0	N	No
Kitchen/Living	CAP-057-17 A	Opening 12	2960	4394	sliding	45.0	N	No
Pnatry	CAP-061-06 A	Opening 15	1750	1000	awning	90.0	W	No
Pnatry	CAP-055-52 A	Opening 35	1200	1000	fixed	0.0	W	No
Bedroom 3	CAP-057-17 A	Opening 16	2960	2302	sliding	45.0	W	No
Bedroom 2	CAP-057-17 A	Opening 20	2960	2464	sliding	45.0	W	No
Master Bedroom	CAP-057-17 A	Opening 21	2960	2455	sliding	45.0	W	No

Roof window* type and performance value

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 description	Opening Area [m²]	Orientation	Outdoor shade	Indoor shade
No Data Available						

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orientation	Outdoor shade	Diffuser
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*
1	16 Murray St Elsternwick - Retaining walls	0.5	Medium		No

2	16 Murray St Elsternwick - Basement concrete	0.5	Medium		No
3	16 Murray St - Intertenancy walls	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
4	16 Murray St - Internal concrete walls	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.0)	No
5	16 Murray St - External terracotta walls	0.7	Dark	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
6	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
7	16 Murray St - Intertenancy walls	0.4	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (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)
Shared 1	1	2600	25458	W	0	No
Shared 1	1	2600	5044	S	0	No
Shared 1	1	2600	1863	W	0	No
Shared 1	1	2600	1899	SW	0	No
Shared 1	1	2600	1228	SW	0	No
Shared 1	1	2600	8638	SW	0	No
Shared 1	2	2600	3634	E	0	Yes
Shared 1	2	2600	1128	N	0	No
Shared 1	2	2600	9910	E	0	No
Shared 1	2	2600	2901	N	0	No
Shared 1	2	2600	3837	E	0	No
Shared 1	2	2600	5168	S	0	No
Shared 1	2	2600	5276	W	0	No
Shared 1	2	2600	8173	S	0	No
Shared 1	1	2600	5075	E	0	No
Shared 1	1	2600	345	S	0	No
Shared 1	1	2600	10332	E	0	No
Shared 1	1	2600	25938	N	0	No
Ensuite	3	3100	3614	S	0	No
Ensuite	4	3100	1909	E	0	No
Ensuite	4	3100	1985	N	0	No
Ensuite	4	3100	964	E	0	No
LDRY	4	3100	1939	E	0	No

LDRY	4	3100	1597	N	0	No
Kitchen/Living	5	3100	4275	W	599	Yes
Kitchen/Living	3	3100	1571	S	0	No
Kitchen/Living	3	3100	2841	E	0	No
Kitchen/Living	3	3100	604	S	0	No
Kitchen/Living	5	3100	4751	E	0	Yes
Kitchen/Living	5	3100	4932	N	0	Yes
Kitchen/Living	5	3100	558	W	0	Yes
Kitchen/Living	5	3100	6115	N	624	Yes
Pntry	6	3100	607	N	0	Yes
Pntry	5	3100	2384	W	0	Yes
Bedroom 3	5	3100	2923	W	288	Yes
Bedroom 2	5	3100	2916	W	288	Yes
WIR	3	3100	4214	S	0	No
Master Bedroom	7	3100	4963	S	0	No
Master Bedroom	5	3100	3278	W	0	Yes
Hallway	3	3100	4519	E	0	No

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Internal Plaster board Stud Wall	1719	

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Shared 1	FR5 - 200mm concrete slab	562.9	Enclosed	R0.0	none
Ensuite	FR5 - 250mm concrete slab	8.4	Enclosed	R3.6	Tiles
LDRY	FR5 - 250mm concrete slab	3.1	Enclosed	R3.6	Tiles
Bath 1	FR5 - 250mm concrete slab	5.5	Enclosed	R3.6	Tiles
Kitchen/Living	FR5 - 250mm concrete slab	14	Enclosed	R3.6	Timber
Kitchen/Living	FR5 - 250mm concrete slab	57.6	Enclosed	R3.6	Timber
Pntry	FR5 - 250mm concrete slab	4.3	Enclosed	R3.6	Timber
Bath2	FR5 - 250mm concrete slab	4.8	Enclosed	R3.6	Tiles
Bedroom 3	FR5 - 250mm concrete slab	13.8	Enclosed	R3.6	Carpet
Bedroom 2	FR5 - 250mm concrete slab	13.4	Enclosed	R3.6	Carpet
WIR	FR5 - 250mm concrete slab	14	Enclosed	R3.6	Timber
Master Bedroom	FR5 - 250mm concrete slab	16.2	Enclosed	R3.6	Carpet
Hallway	FR5 - 250mm concrete slab	12.3	Enclosed	R3.6	Timber
Hallway 2	FR5 - 250mm concrete slab	4.5	Enclosed	R3.6	Timber

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Shared 1	FR5 - 250mm concrete slab	R3.6	No
Shared 1	Plasterboard	R0.0	No
Kitchen/Living	Plasterboard	R2.8	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Ensuite	3	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
LDRY	2	Downlights	80	80	Sealed
LDRY	1	Exhaust Fans	250	250	Sealed
Bath 1	1	Exhaust Fans	250	250	Sealed
Bath 1	2	Downlights	80	80	Sealed
Kitchen/Living	28	Downlights	80	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	250	Sealed
Pnatry	2	Downlights	80	80	Sealed
Bath2	2	Downlights	80	80	Sealed
Bath2	2	Exhaust Fans	250	250	Sealed
Bedroom 3	5	Downlights	80	80	Sealed
Bedroom 2	5	Downlights	80	80	Sealed
WIR	3	Downlights	80	80	Sealed
Master Bedroom	5	Downlights	80	80	Sealed
Hallway	4	Downlights	80	80	Sealed
Hallway 2	2	Downlights	80	80	Sealed

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Ceiling fans

Location	Quantity	Diameter [mm]
No Data Available		

Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
------------------	--	--------------------	--------------------------	-------------------------

External wall	90 x 40	600	0.75	0
---------------	---------	-----	------	---

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
No Whole of Home performance assessment conducted for this certificate.					

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.			

Onsite renewable energy schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
No Whole of Home performance assessment conducted for this certificate.		

Battery schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Whole of Home performance assessment conducted for this certificate.	

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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 openable and has a ceiling. In some circumstances it will include garages.
COP	Coefficient of performance
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 window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 26 May 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address Apt 03, 16 Murray Street,
Elsternwick, VIC, 3185

Lot/DP -

NCC Class* Class 2

Floor/all Floors

Type New Home

Plans

Main plan 25005/TP102/RevA/010625

Prepared by Studio Mccue

Construction and environment

Assessed floor area [m²]*

Conditioned* 149.9

Unconditioned* 3.3

Total 153.2

Garage -

Exposure type

suburban

NatHERS climate zone

21 Melbourne RO



Accredited assessor

Name [REDACTED]

Business name Environmental Solutions

Email [REDACTED]

Phone [REDACTED]

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

NCC Requirements

NCC provisions Volume 1

State/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



50.2 MJ/m²

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:
www.nathers.gov.au

Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	37.9	12.3
Load limits	55	38

Features determining load limits

Floor type	N/A
(lowest conditioned area)	
NCC climate zone 1 or 2	Y
Outdoor living area	N/A
Outdoor living area ceiling fan	N/A

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit When using either link, ensure you are visiting www.fr5.com.au.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG – Concrete Slab on Ground

SF – Suspended Floor (or a mixture of CSOG and SF)

NA – Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA – not applicable

Outdoor living area:

Yes

No

NA – not applicable

Outdoor living area ceiling fan:

Yes

No

NA – not applicable

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

Energy use:

No Whole of Home performance assessment conducted for this certificate.

Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

No Whole of Home performance assessment conducted for this certificate.

Graph key:



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

Certificate check

The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/surveyor checked	Builder checked	Consent authority/surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'External wall type' table on this Certificate?		☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?		☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Floor type' table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NATHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Certificate check

Continued

Approval stage		Construction stage		
Assessor checked	Consent authority/surveyor checked	Builder checked	Consent authority/surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging

Does the dwelling meet the NCC requirement for thermal bridging?

☐ ☐ ☐ ☐

Insulation installation method

Has the insulation been installed according to the NCC requirements?

☐ ☐ ☐

Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?

☐ ☐ ☐ ☐

Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)

Appliances

Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐

Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐

Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐

Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐

Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?

☐ ☐ ☐ ☐

Additional NCC Requirements for Services (not included in the NatHERS assessment)

Does the lighting meet the artificial lighting requirements specified in the NCC?

☐ ☐ ☐ ☐

Does the hot water system meet the additional requirements specified in the NCC?

☐ ☐ ☐ ☐

Provisional values* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?

☐ ☐ ☐ ☐

Other NCC requirements

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

Room schedule

Room	Zone Type	Area [m²]
Shared 1	basementCarPark	682
Bath	nightTime	7.8
Ensuite	nightTime	10.6
Bedroom 3	bedroom	14.4
Study	dayTime	12.1
WIR	dayTime	5.1
Master Bedroom	bedroom	20.3
Hallway	dayTime	10.7
Hallway 2	dayTime	5.5
Kitchen/Living	kitchen	59.3
Circ	unconditioned	3.3
Scullery	dayTime	4.9

Window and glazed door type and performance

Default* windows

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

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
CAP-055-52 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6EA	2.71	0.58	0.55	0.61
CAP-061-06 A	Capral 50 Series Awning in 400 Series DG 6EA-12Ar-6	4.42	0.4	0.38	0.42
CAP-057-17 A	Capral 900 Sliding Door DG 6EcAd-12Ar-6EA	3.12	0.41	0.39	0.43
CAP-048-06 A	200 Hinged Door into 400 Narrowline DG DG 6EA-12Ar-6	3.6	0.44	0.42	0.46

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Ensuite	CAP-055-52 A	Opening 52	1200	960	fixed	0.0	W	No
Ensuite	CAP-061-06 A	Opening 53	1750	960	awning	90.0	W	No
Bedroom 3	CAP-057-17 A	Opening 47	2400	2500	sliding	45.0	E	No

Bedroom 3	CAP-055-52 A	Opening 49	1900	900	fixed	0.0	E	No
Study	CAP-061-06 A	Opening 48	1320	1600	awning	90.0	S	No
Study	CAP-055-52 A	Opening 60	1200	1810	fixed	0.0	S	No
Master Bedroom	CAP-055-52 A	Opening 43	1200	1100	fixed	0.0	S	No
Master Bedroom	CAP-061-06 A	Opening 44	1750	1100	awning	90.0	S	No
Master Bedroom	CAP-057-17 A	Opening 21	2960	2400	sliding	45.0	W	No
Hallway	CAP-048-06 A	Opening 40	2960	1000	casement	90.0	E	No
Hallway	CAP-055-52 A	Opening 51	2960	431	fixed	0.0	E	No
Kitchen/Living	CAP-057-17 A	Opening 42	2960	6132	sliding	45.0	S	No
Scullery	CAP-061-06 A	Opening 56	1220	901	awning	90.0	S	No
Scullery	CAP-055-52 A	Opening 57	1590	894	fixed	0.0	S	No

Roof window* type and performance value

Default* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
No Data Available					

Roof window* schedule

Location	Window ID	Window no.	Opening %	Area [m ²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m ²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
No Data Available				

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	16 Murray St Elsternwick - Retaining walls	0.5	Medium		No
2	16 Murray St Elsternwick - Basement concrete	0.5	Medium		No
3	16 Murray St - External terracotta walls	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
4	16 Murray St - Intertenancy walls	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
5	16 Murray St - External terracotta walls	0.7	Dark	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
6	16 Murray St - External terracotta walls	0.4	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Shared 1	1	2600	25458	W	0	No
Shared 1	1	2600	5044	S	0	No
Shared 1	1	2600	1863	W	0	No
Shared 1	1	2600	1399	SW	0	No
Shared 1	1	2600	1232	S	0	No
Shared 1	1	2600	8368	S	0	No
Shared 1	2	2600	3975	E	0	Yes
Shared 1	2	2600	9305	S	0	No
Shared 1	1	2600	13706	E	0	No
Shared 1	1	2600	1011	S	0	No
Shared 1	1	2600	5366	E	0	No
Shared 1	1	2600	1030	N	0	No
Shared 1	1	2600	5012	E	0	No
Shared 1	1	2600	25938	N	0	No
Ensuite	3	3100	2676	W	251	Yes
Ensuite	4	3100	3960	N	0	No
Bedroom 3	3	3100	4466	E	0	Yes
Bedroom 3	3	3100	493	N	0	Yes
Bedroom 3	5	3100	3971	S	953	Yes
Study	5	3100	4071	S	952	Yes

WIR	4	3100	1903	N	0	No
Master Bedroom	6	3100	5989	S	340	Yes
Master Bedroom	5	3100	3375	W	305	Yes
Hallway	3	3100	1618	E	0	Yes
Hallway	4	3100	8374	N	0	No
Hallway 2	4	3100	2195	W	0	No
Hallway 2	4	3100	2198	E	0	No
Hallway 2	4	3100	2507	N	0	No
Kitchen/Living	3	3100	6998	S	336	Yes
Kitchen/Living	3	3100	722	S	891	Yes
Kitchen/Living	4	3100	7290	N	0	No
Scullery	3	3100	2610	S	0	No

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	148.3	

Floor type

Location	Construction	Sub-floor Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Shared 1	FR5 - 200mm concrete slab	682	Enclosed	R3.2	none
Bath	FR5 - 250mm concrete slab	0.6	Enclosed	R3.6	Tiles
Bath	FR5 - 250mm concrete slab	7.2	Enclosed	R3.6	Tiles
Ensuite	FR5 - 250mm concrete slab	10.6	Enclosed	R3.6	Tiles
Bedroom 3	FR5 - 250mm concrete slab	2	Enclosed	R3.6	Carpet
Bedroom 3	FR5 - 250mm concrete slab	10.7	Enclosed	R3.6	Carpet
Bedroom 3	FR5 - 250mm concrete slab	1.7	Enclosed	R3.6	Carpet
Study	FR5 - 250mm concrete slab	12.1	Enclosed	R3.6	Carpet
WIR	FR5 - 250mm concrete slab	5.1	Enclosed	R3.6	Timber
Master Bedroom	FR5 - 250mm concrete slab	16.6	Enclosed	R3.6	Carpet
Master Bedroom	FR5 - 250mm concrete slab	3.7	Enclosed	R3.6	Carpet
Hallway	FR5 - 250mm concrete slab	10.7	Enclosed	R3.6	Timber
Hallway 2	FR5 - 250mm concrete slab	5.5	Enclosed	R3.6	Timber
Kitchen/Living	FR5 - 250mm concrete slab	59.3	Enclosed	R3.6	Timber
Circ	FR5 - 250mm concrete slab	3.3	Enclosed	R3.6	Timber
Scullery	FR5 - 250mm concrete slab	4.9	Enclosed	R3.6	Timber

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
----------	----------------------------	--	------------------

Shared 1	FR5 - 250mm concrete slab	R3.6	No
Shared 1	Plasterboard	R0.0	No
Master Bedroom	Plasterboard	R2.8	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Bath	3	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Ensuite	2	Downlights	80	80	Sealed
Bedroom 3	5	Downlights	80	80	Sealed
Study	5	Downlights	80	80	Sealed
WIR	2	Downlights	80	80	Sealed
Master Bedroom	5	Downlights	80	80	Sealed
Hallway	4	Downlights	80	80	Sealed
Hallway 2	2	Downlights	80	80	Sealed
Kitchen/Living	2	Downlights	80	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	250	Sealed
Circ	2	Downlights	80	80	Sealed
Scullery	1	Downlights	80	80	Sealed

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Ceiling fans

Location	Quantity	Diameter [mm]
No Data Available		

Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
External wall	90 x 40	600	0.75	0

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
No Whole of Home performance assessment conducted for this certificate.					

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.			

Onsite renewable energy schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
No Whole of Home performance assessment conducted for this certificate.		

Battery schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Whole of Home performance assessment conducted for this certificate.	

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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 openable and has a ceiling. In some circumstances it will include garages.
COP	Coefficient of performance
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 window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 23 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address Apt 05, 16 Murray Street,
Elsternwick, VIC, 3185

Lot/DP -

NCC Class* Class 2

Floor/all Floors

Type New Home

Plans

Main plan 25005/TP102/RevA/010625

Prepared by Studio Mccue

Construction and environment

Assessed floor area [m²]*

Conditioned* 144.5

Unconditioned* 5

Total 149.5

Garage -

Exposure type

suburban

NatHERS climate zone

21 Melbourne RO



Accredited assessor

Name [REDACTED]

Business name [REDACTED]

Email [REDACTED]

Phone [REDACTED]

Accreditation No. [REDACTED] 024

Assessor Accrediting Organisation
Design Matters National

Declaration of interest No

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

NCC Requirements

NCC provisions Volume 1

State/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



27 MJ/m²

Predicted annual energy load for
heating and cooling based on standard
occupancy assumptions.

For more information on
your dwelling's rating see:
www.nathers.gov.au

Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	13.9	13.1
Load limits	55	38

Features determining load limits

Floor type	N/A
(lowest conditioned area)	
NCC climate zone 1 or 2	Y
Outdoor living area	N/A
Outdoor living area ceiling fan	N/A

Whole of Home performance rating

No Whole of Home
performance rating
generated for this
certificate

Verification

To verify this certificate, scan
the QR code or visit When
using either link, ensure you
are visiting www.fr5.com.au.



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG – Concrete Slab on Ground

SF – Suspended Floor (or a mixture of CSOG and SF)

NA – Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA – not applicable

Outdoor living area:

Yes

No

NA – not applicable

Outdoor living area ceiling fan:

Yes

No

NA – not applicable

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

Energy use:

No Whole of Home performance assessment conducted for this certificate.

Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

No Whole of Home performance assessment conducted for this certificate.

Graph key:



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

Certificate check

The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'External wall type' table on this Certificate?		☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?		☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Floor type' table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NatHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Certificate check

Continued

Approval stage		Construction stage		
Assessor checked	Consent authority/surveyor checked	Builder checked	Consent authority/surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging

Does the dwelling meet the NCC requirement for thermal bridging?

☐ ☐ ☐ ☐

Insulation installation method

Has the insulation been installed according to the NCC requirements?

☐ ☐ ☐

Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?

☐ ☐ ☐ ☐

Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)

Appliances

Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?

☐ ☐ ☐ ☐ ☐

Additional NCC Requirements for Services (not included in the NatHERS assessment)

Does the lighting meet the artificial lighting requirements specified in the NCC?

☐ ☐ ☐ ☐

Does the hot water system meet the additional requirements specified in the NCC?

☐ ☐ ☐ ☐

Provisional values* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?

☐ ☐ ☐ ☐

Other NCC requirements

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

Room schedule

Room	Zone Type	Area [m²]
Ensuite	nightTime	12.2
LDRY	dayTime	4.7
Bath 1	unconditioned	5
Kitchen/Living	kitchen	55.9
Pntry	dayTime	4.3
Bedroom 3	bedroom	15.5
Bedroom 2	bedroom	12.9
WIR	nightTime	4.7
Master Bedroom	bedroom	15.6
Hallway	dayTime	10.8
WIR	dayTime	7.8

Window and glazed door type and performance

Default* windows

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

Custom* windows

Window ID	Window description	Substitution tolerance ranges			
		Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
CAP-061-06 A	Capral 50 Series Awning in 400 Series DG 6EA-12Ar-6	4.42	0.4	0.38	0.42
CAP-057-17 A	Capral 900 Sliding Door DG 6EcAd-12Ar-6EA	3.12	0.41	0.39	0.43
CAP-055-52 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6EA	2.71	0.58	0.55	0.61

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	CAP-061-06 A	Opening 50	1760	1800	awning	90.0	E	No
Kitchen/Living	CAP-057-17 A	Opening 13	2960	4461	sliding	45.0	N	No
Pntry	CAP-061-06 A	Opening 46	1760	1000	awning	90.0	E	No
Pntry	CAP-055-52 A	Opening 47	1200	1000	fixed	0.0	E	No
Bedroom 3	CAP-057-17 A	Opening 16	2960	2500	sliding	45.0	E	No
Bedroom 3	CAP-061-06 A	Opening 51	1700	1800	awning	90.0	N	No

Bedroom 2	CAP-061-06 A	Opening 48	1760	750	awning	90.0	E	No
Bedroom 2	CAP-055-52 A	Opening 49	1760	1000	fixed	0.0	E	No
Master Bedroom	CAP-061-06 A	Opening 44	1760	1000	awning	90.0	E	No
Master Bedroom	CAP-055-52 A	Opening 45	1200	1000	fixed	0.0	E	No
WIR	CAP-055-52 A	Opening 52	2960	600	fixed	0.0	N	No

Roof window* type and performance value

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 description	Opening Area [m ²]	Orientation	Outdoor shade	Indoor shade
No Data Available						

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m ²]	Orientation	Outdoor shade	Diffuser
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*
1	16 Murray St Elsternwick - Intertenancy walls	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No

3	16 Murray St - External terracotter walls	0.7	Dark	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
4	16 Murray St - External terracotter walls	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
5	16 Murray St - External terracotter walls	0.4	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Ensuite	1	3100	2895	W	0	No
Ensuite	1	3100	3354	S	0	No
Ensuite	2	3100	190	S	0	Yes
LDRY	1	3100	2786	W	0	No
LDRY	1	3100	1694	S	0	No
Kitchen/Living	3	3100	348	N	0	Yes
Kitchen/Living	3	3100	1931	E	0	Yes
Kitchen/Living	3	3100	1397	E	0	Yes
Kitchen/Living	3	3100	622	N	0	Yes
Kitchen/Living	3	3100	1556	E	0	Yes
Kitchen/Living	3	3100	578	N	3362	Yes
Pntry	3	3100	2493	E	0	No
Pntry	2	3100	100	N	0	Yes
Bedroom 3	3	3100	3055	E	6760	Yes
Bedroom 3	4	3100	5061	N	0	No
Bedroom 3	4	3100	3088	W	0	Yes
Bedroom 2	3	3100	3022	E	402	No
WIR	1	3100	1670	S	0	No
Master Bedroom	3	3100	2873	E	399	No
Master Bedroom	1	3100	5129	S	0	No
Master Bedroom	5	3100	335	S	0	Yes
Hallway	1	3100	5648	W	0	No
WIR	4	3100	967	N	0	Yes
WIR	1	3100	1904	W	0	No

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	158	

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Ensuite	FR5 - 250mm concrete slab	12.2	Enclosed	R0.0	Tiles
LDRY	FR5 - 250mm concrete slab	4.7	Enclosed	R0.0	Tiles
Bath 1	FR5 - 250mm concrete slab	5	Enclosed	R0.0	Tiles
Kitchen/Living	FR5 - 250mm concrete slab	55.9	Enclosed	R0.0	Timber
Pntry	FR5 - 250mm concrete slab	4.3	Enclosed	R0.0	Timber
Bedroom 3	FR5 - 250mm concrete slab	15.5	Enclosed	R0.0	Carpet
Bedroom 2	FR5 - 250mm concrete slab	10.5	Enclosed	R0.0	Carpet
Bedroom 2	FR5 - 250mm concrete slab	2.4	Enclosed	R0.0	Carpet
WIR	FR5 - 250mm concrete slab	4.7	Enclosed	R0.0	Timber
Master Bedroom	FR5 - 250mm concrete slab	12.9	Enclosed	R0.0	Carpet
Master Bedroom	FR5 - 250mm concrete slab	2.7	Enclosed	R0.0	Carpet
Hallway	FR5 - 250mm concrete slab	10.8	Enclosed	R0.0	Timber
WIR	FR5 - 250mm concrete slab	7.8	Enclosed	R0.0	Timber

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Bedroom 3	Plasterboard	R2.3	No
Bedroom 2	Plasterboard	R2.3	No
Master Bedroom	Plasterboard	R2.3	No

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1982. The document must not be used for any purpose which may breach any copyright.

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Ensuite	3	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
LDRY	2	Downlights	80	80	Sealed
LDRY	1	Exhaust Fans	250	250	Sealed
Bath 1	1	Exhaust Fans	250	250	Sealed
Bath 1	2	Downlights	80	80	Sealed
Kitchen/Living	28	Downlights	80	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	250	Sealed
Pntry	2	Downlights	80	80	Sealed
Bedroom 3	5	Downlights	80	80	Sealed
Bedroom 2	5	Downlights	80	80	Sealed
WIR	3	Downlights	80	80	Sealed
Master Bedroom	5	Downlights	80	80	Sealed

NatHERS Certificate

8.9 Star Rating as of 23 Mar 2026

Hallway	4	Downlights	80	80	Sealed
---------	---	------------	----	----	--------

Ceiling fans

Location	Quantity	Diameter [mm]
No Data Available		

Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium

Thermal bridging schedule for steel frame elements

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
External wall	90 x 40	600	0.75	0

Appliance schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
No Whole of Home performance assessment conducted for this certificate.					

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.			

Onsite renewable energy schedule

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
-------------	-------------	------------------------------------

No Whole of Home performance assessment conducted for this certificate.

Battery *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type

Size [battery storage capacity]

No Whole of Home performance assessment conducted for this certificate.

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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 openable and has a ceiling. In some circumstances it will include garages.
COP	Coefficient of performance
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 window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 23 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address Apt 07, 16 Murray Street,
Elsternwick, VIC, 3185

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan 25005/TP102/RevA/010625

Prepared by Studio Mccue

Construction and environment

Assessed floor area [m²]*

Conditioned*	170
Unconditioned*	0
Total	170
Garage	-

Exposure type suburban

NatHERS climate zone 21 Melbourne RO



Accredited assessor

Name [Redacted]

Business name [Redacted]

Email [Redacted]

Phone [Redacted]

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

NCC Requirements

NCC provisions Volume 1

State/Territory variation Yes

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	27.1	22.6
Load limits	55	38

Features determining load limits

Floor type (lowest conditioned area)	N/A
NCC climate zone 1 or 2	Y
Outdoor living area	N/A
Outdoor living area ceiling fan	N/A

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate

Verification

To verify this certificate, scan the QR code or visit When using either link, ensure you are visiting www.fr5.com.au.



About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

CSOG – Concrete Slab on Ground

SF – Suspended Floor (or a mixture of CSOG and SF)

NA – Not Applicable

NCC climate Zone 1 or 2:

Yes

No

NA – not applicable

Outdoor living area:

Yes

No

NA – not applicable

Outdoor living area ceiling fan:

Yes

No

NA – not applicable

Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

Energy use:

No Whole of Home performance assessment conducted for this certificate.

Greenhouse gas emissions:

No Whole of Home performance assessment conducted for this certificate.

No Whole of Home performance assessment conducted for this certificate.

Graph key:



Predicted onsite renewable energy impact

No Whole of Home performance assessment conducted for this certificate.

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright.

Certificate check

The checklist covers important items impacting the dwelling's ratings. It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item. It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/surveyor checked	Builder checked	Consent authority/surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in 'Window and glazed door schedule' and 'Roof window schedule' tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the 'Window and glazed door type and performance' and 'Roof window type and performance' tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'External wall type' table on this Certificate?		☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the 'External wall type' table on this Certificate?		☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Floor type' table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the 'quantity' and 'type' of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling penetrations' table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the 'Ceiling type' table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the 'Roof type' table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NatHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Certificate check

Continued

Approval stage		Construction stage		
Assessor checked	Consent authority/surveyor checked	Builder checked	Consent authority/surveyor checked	Occupancy/other

Additional NCC requirements for thermal performance (not included in the NatHERS assessment)

Thermal bridging

Does the dwelling meet the NCC requirement for thermal bridging?

☐
☐
☐
☐

Insulation installation method

Has the insulation been installed according to the NCC requirements?

☐
☐
☐

Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?

☐
☐
☐
☐

Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)

Appliances

Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐
☐
☐
☐
☐

Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐
☐
☐
☐
☐

Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐
☐
☐
☐
☐

Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the 'Appliance schedule' on this Certificate?

☐
☐
☐
☐
☐

Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the 'Onsite Renewable Energy schedule' on this Certificate?

☐
☐
☐
☐
☐

Additional NCC Requirements for Services (not included in the NatHERS assessment)

Does the lighting meet the artificial lighting requirements specified in the NCC?

☐
☐
☐
☐

Does the hot water system meet the additional requirements specified in the NCC?

☐
☐
☐
☐

Provisional values* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?

☐
☐
☐
☐

Other NCC requirements

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

Room schedule

Room	Zone Type	Area [m²]
Kitchen/Living	kitchen	67.8
Laundry	dayTime	4.7
Pantry	dayTime	4.7
Bathroom	dayTime	4.9
Bedroom 1	bedroom	15.7
Strage	dayTime	4.7
Master Bedroom	bedroom	17.9
WIR	nightTime	8
Ensuite	nightTime	8.7
Bed 2 entry	dayTime	5.1
Ensuite 2	nightTime	5
Bedroom 2	bedroom	12.7
Passage	dayTime	10.1

Window and glazed door type and performance

Default* windows

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

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
CAP-057-17 A	Capral 900 Sliding Door DG 6EcAd-12Ar-6EA	3.12	0.41	0.39	0.43
CAP-055-52 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6EA	2.71	0.58	0.55	0.61

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	CAP-057-17 A	Opening 73	2300	1700	sliding	45.0	N	No
Kitchen/Living	CAP-057-17 A	Opening 67	2700	6067	sliding	45.0	N	No
Kitchen/Living	CAP-057-17 A	Opening 72	2300	3500	sliding	45.0	W	No
Bedroom 1	CAP-057-17 A	Opening 71	2300	1800	sliding	45.0	W	No
Master Bedroom	CAP-057-17 A	Opening 70	2300	3500	sliding	45.0	W	No

WIR	CAP-057-17 A	Opening 65	2300	987	sliding	45.0	S	No
Ensuite	CAP-055-52 A	Opening 68	1760	1700	fixed	0.0	S	No
Bedroom 2	CAP-057-17 A	Opening 69	2300	1822	sliding	45.0	S	No

Roof window* type and performance value

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 %	Area [m ²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* schedule

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m ²]	Orientation	Outdoor shade	Diffuser
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*
1	16 Murray St - Intertenancy walls	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	16 Murray St - External terracotta walls	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

3

16 Murray St - Internal concrete walls

0.5

Medium

Glass fibre batt (k = 0.044
density = 12 kg/m3)
(R2.0)

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	1	3100	566	E	0	No
Kitchen/Living	1	3100	472	S	0	No
Kitchen/Living	1	3100	4744	E	0	No
Kitchen/Living	2	3100	1827	N	0	Yes
Kitchen/Living	2	3100	819	N	0	No
Kitchen/Living	2	3100	7018	N	707	Yes
Kitchen/Living	2	3100	1506	N	0	No
Kitchen/Living	2	2300	2548	W	0	No
Kitchen/Living	2	2300	2548	W	0	No
Kitchen/Living	2	2300	3648	W	330	Yes
Kitchen/Living	2	2300	690	W	0	No
Kitchen/Living	1	3100	1394	E	0	No
Kitchen/Living	1	3100	1394	E	0	No
Kitchen/Living	1	3100	561	W	0	No
Kitchen/Living	1	3100	1954	W	0	No
Pantry	2	2300	1775	W	0	No
Bedroom 1	2	2300	1144	W	0	No
Bedroom 1	2	2300	1944	W	302	Yes
Bedroom 1	2	2300	1110	W	0	No
Strage	3	3100	3024	E	0	No
Strage	1	3100	1550	N	0	No
Master Bedroom	2	2300	3551	W	302	Yes
WIR	2	2300	4072	S	0	No
WIR	2	2300	1029	S	490	Yes
WIR	2	2300	1595	W	0	No
Ensuite	2	2300	1655	S	462	Yes
Bed 2 entry	3	3100	181	N	0	No
Ensuite 2	1	3100	2889	E	0	No
Ensuite 2	3	3100	1715	N	0	No
Bedroom 2	2	2300	957	S	0	No
Bedroom 2	2	2300	1817	S	416	Yes
Bedroom 2	2	2300	838	S	0	No
Bedroom 2	1	3100	3551	E	0	No

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document is not to be used for any purpose which may breach any copyright.

Passage	1	3100	2528	E	0	No
---------	---	------	------	---	---	----

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	181.4	

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	FR5 - 250mm concrete slab	13.1	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 250mm concrete slab	54.7	Enclosed	R0.0	Timber
Laundry	FR5 - 250mm concrete slab	4.7	Enclosed	R0.0	Tiles
Pantry	FR5 - 250mm concrete slab	2.4	Enclosed	R0.0	Timber
Pantry	FR5 - 250mm concrete slab	2.3	Enclosed	R0.0	Timber
Bathroom	FR5 - 250mm concrete slab	4.9	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 250mm concrete slab	10.2	Enclosed	R0.0	Carpet
Bedroom 1	FR5 - 250mm concrete slab	5.5	Enclosed	R0.0	Carpet
Strage	FR5 - 250mm concrete slab	4.7	Enclosed	R0.0	Timber
Master Bedroom	FR5 - 250mm concrete slab	11.8	Enclosed	R0.0	Carpet
Master Bedroom	FR5 - 250mm concrete slab	4.6	Enclosed	R0.0	Carpet
WIR	FR5 - 250mm concrete slab	1.2	Enclosed	R0.0	Carpet
WIR	FR5 - 250mm concrete slab	6.8	Enclosed	R0.0	Carpet
Ensuite	FR5 - 250mm concrete slab	6.7	Enclosed	R0.0	Tiles
Ensuite	FR5 - 250mm concrete slab	2	Enclosed	R0.0	Tiles
Bed 2 entry	FR5 - 250mm concrete slab	5.1	Enclosed	R0.0	Carpet
Ensuite 2	FR5 - 250mm concrete slab	5	Enclosed	R0.0	Tiles
Bedroom 2	FR5 - 250mm concrete slab	8.2	Enclosed	R0.0	Carpet
Bedroom 2	FR5 - 250mm concrete slab	4.5	Enclosed	R0.0	Carpet
Passage	FR5 - 250mm concrete slab	10.1	Enclosed	R0.0	Timber

This copied document is to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Kitchen/Living	Plasterboard	R4.2	No
Kitchen/Living	Plasterboard	R4.6	No
Laundry	Plasterboard	R4.6	No
Pantry	Plasterboard	R4.6	No
Pantry	Plasterboard	R4.2	No
Bathroom	Plasterboard	R4.6	No
Bedroom 1	Plasterboard	R4.6	No
Bedroom 1	Plasterboard	R4.2	No

Strage	Plasterboard	R4.6	No
Master Bedroom	Plasterboard	R4.6	No
Master Bedroom	Plasterboard	R4.2	No
WIR	Plasterboard	R4.6	No
WIR	Plasterboard	R4.2	No
Ensuite	Plasterboard	R4.6	No
Ensuite	Plasterboard	R4.2	No
Bed 2 entry	Plasterboard	R4.6	No
Ensuite 2	Plasterboard	R4.6	No
Bedroom 2	Plasterboard	R4.6	No
Bedroom 2	Plasterboard	R4.2	No
Passage	Plasterboard	R4.6	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Kitchen/Living	28	Downlights	80	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	250	Sealed
Laundry	2	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	Sealed
Pantry	2	Downlights	80	80	Sealed
Bathroom	2	Downlights	80	80	Sealed
Bathroom	1	Exhaust Fans	250	250	Sealed
Bedroom 1	8	Downlights	80	80	Sealed
Strage	2	Downlights	80	80	Sealed
Master Bedroom	8	Downlights	80	80	Sealed
WIR	3	Downlights	80	80	Sealed
Ensuite	3	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Bed 2 entry	2	Downlights	80	80	Sealed
Ensuite 2	1	Exhaust Fans	250	250	Sealed
Ensuite 2	2	Downlights	80	80	Sealed
Bedroom 2	5	Downlights	80	80	Sealed
Passage	5	Downlights	80	80	Sealed

Ceiling fans

Location	Quantity	Diameter [mm]
No Data Available		

Roof type

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
External wall	90 x 40	600	0.75	0

Appliance *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.				

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER	Zone	Zone 3 STC	Assessed daily load
No Whole of Home performance assessment conducted for this certificate.						

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Whole of Home performance assessment conducted for this certificate.			

Onsite renewable energy *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
No Whole of Home performance assessment conducted for this certificate.		

Battery *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Whole of Home performance assessment conducted for this certificate.	

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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 openable and has a ceiling. In some circumstances it will include garages.
COP	Coefficient of performance
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 copyright window product and whose properties have been derived by statistical methods.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright

Appendix C – Renewable Energy

7/1/25, 9:34 AM



Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lower performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

Disclaimer: The PVWatts® Model ("Model") is provided by the National Renewable Energy Laboratory ("NREL"), which is operated by the Alliance for Sustainable Energy, LLC ("Alliance") for the U.S. Department Of Energy ("DOE") and may be used for any purpose whatsoever.

The names DOE/NREL/ALLIANCE shall not be used in any representation, advertising, publicity or other manner whatsoever to endorse or promote any entity that adopts or uses the Model. DOE/NREL/ALLIANCE shall not provide any support, consulting, training or assistance of any kind with regard to the use of the Model or any updates, revisions or new versions of the Model.

YOU AGREE TO INDEMNIFY DOE/NREL/ALLIANCE, AND ITS AFFILIATES, OFFICERS, AGENTS, AND EMPLOYEES AGAINST ANY CLAIM OR DEMAND, INCLUDING REASONABLE ATTORNEYS' FEES, RELATED TO YOUR USE, RELIANCE, OR ADOPTION OF THE MODEL FOR ANY PURPOSE WHATSOEVER. THE MODEL IS PROVIDED BY DOE/NREL/ALLIANCE "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. IN NO EVENT SHALL DOE/NREL/ALLIANCE BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO CLAIMS ASSOCIATED WITH THE LOSS OF DATA OR PROFITS, WHICH MAY RESULT FROM ANY ACTION IN CONTRACT, NEGLIGENCE OR OTHER TORTIOUS CLAIM THAT ARISES OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE MODEL.

The energy output range is based on analysis of 30 years of historical weather data, and is intended to provide an indication of the possible interannual variability in generation for a fixed (open roof) PV system at this location.

PVWatts Calculator

RESULTS

12,758 kWh/Year*

Month	Solar Radiation (kWh / m ² / day)	AC Energy (kWh)
January	7.06	1,628
February	6.47	1,364
March	5.28	1,246
April	3.69	860
May	2.36	580
June	2.10	502
July	2.09	521
August	2.95	734
September	4.64	1,097
October	5.52	1,327
November	5.88	1,350
December	6.75	1,549
Annual	4.57	12,758

Location and Station Identification

Requested Location	16 Murray St Elsternwick, VIC 3195
Weather Data Source	1.1 mi
Latitude	
Longitude	145.02° E

PV System Specifications

DC System Size	10 kW					
Module Type	Standard					
Array Type	Fixed (roof mount)					
System Losses	14.08%					
Array Tilt	5°					
Array Azimuth	0°					
DC to AC Size Ratio	1.2					
Inverter Efficiency	96%					
Ground Coverage Ratio	0.4					
Albedo	From weather file					
Bifacial	No (0)					
Monthly Irradiance Loss	Jan	Feb	Mar	Apr	May	June
	0%	0%	0%	0%	0%	0%
	July	Aug	Sept	Oct	Nov	Dec
	0%	0%	0%	0%	0%	0%

Performance Metrics

DC Capacity Factor	14.6%
--------------------	-------

Appendix D – BESS Assessment

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

BESS Report

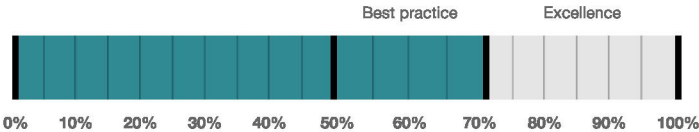
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 16 Murray St Elsternwick Victoria 3185. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Glen Eira City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score



70%

Project details

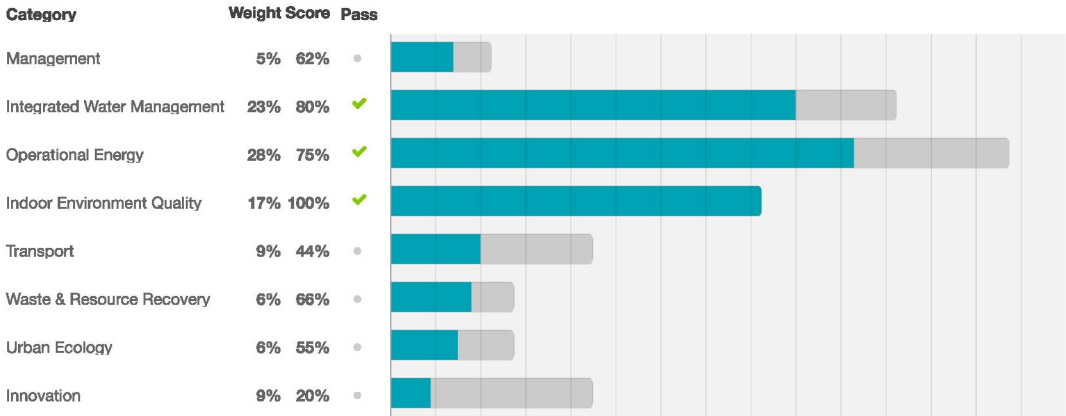
Name	16 Murray Street, Elsternwick
Address	16 Murray Street, Elsternwick 3185
Project ID	6B173449-F7
BESS Version	BESS-9
Date	26 May 2020
Software version	2.3.0-B.652
Site type	Multi unit development (apartment building)
Account	[REDACTED]
Application no.	
Site area	1,022 m ²
Building floor area	1,491 m ²

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright



Performance by category

● This project ● Maximum available



Buildings

Name	Height	Footprint	% of total footprint
Building 1	3	638 m²	100%

Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	Building	% of total area
Apartment				
Apartment 8	1	224 m²	Building 1	14%
Apartment 1	1	194 m²	Building 1	13%
Apartment 7	1	191 m²	Building 1	12%
Apartment 2	1	182 m²	Building 1	12%
Apartment 6	1	174 m²	Building 1	11%
Apartment 5	1	172 m²	Building 1	11%
Apartment 4	1	179 m²	Building 1	11%
Apartment 3	1	176 m²	Building 1	11%
Total	8	1,491 m²	100%	

Supporting Evidence

Shown on Floor Plans

Credit	Requirement	Response	Status
Management 3.1	Annotation: Individual utility meters to be provided to all individual dwellings		-
Management 3.3	Annotation: Sub-meters to be provided to all major common area services (list each)		-
Integrated Water Management 2.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Operational Energy 3.1	Carpark with natural ventilation or CO monitoring system		-
Operational Energy 3.4	Location of clothes line (if proposed)		-
Operational Energy 4.2	Location and size of solar photovoltaic system		-
Indoor Environment Quality 1.1	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
Indoor Environment Quality 1.2	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
Indoor Environment Quality 1.3	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
Indoor Environment Quality 2.1	Dwellings meeting the requirements for being 'naturally ventilated'		-
Transport 1.1	Location of residential bicycle parking spaces		-
Transport 1.2	Location of residential visitor bicycle parking spaces		-
Waste & Resource Recovery 2.1	Location of food and garden waste facilities		-
Waste & Resource Recovery 2.2	Location of recycling facilities		-

Credit	Requirement	Response	Status
Urban Ecology 2.1	Location and size of vegetated areas		-
Urban Ecology 2.3	Location and size of green facade		-
Urban Ecology 2.4	Location of taps and floor waste on balconies / courtyards		-

Supporting Documentation

Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
Integrated Water Management 2.1	STORM report or MUSIC model		-
Operational Energy 3.1	Details of either the fully natural carpark ventilation or CO monitoring system proposed		-
Operational Energy 3.6	Average lighting power density and lighting type(s) to be used		-
Operational Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Indoor Environment Quality 1.1	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 1.2	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 1.3	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 2.1	A list of naturally ventilated dwellings		-

Credit summary

Management Overall contribution 4.5%

			62%
1.1 Pre-Application Meeting			0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential			100%
3.1 Metering - Residential			100%
3.3 Metering - Common Areas			100%
4.1 Building Users Guide			100%

IWM Overall contribution 22.5%

			80%	✓ Pass
1.1 Potable Water Use			46%	✓ Achieved
2.1 Stormwater Treatment			100%	✓ Achieved
3.1 Water Efficient Landscaping			N/A	✦ Scoped Out
Landscape irrigation is connected to the rainwater tank.				
4.1 Building Systems Water Use			N/A	✦ Scoped Out
Small development				

Operational Energy Overall contribution 27.5%

		Minimum required 50%	75%	✓ Pass
	1.2 Thermal Performance Rating - Residential		75%	✓ Achieved
	2.1 Greenhouse Gas Emissions		0%	
	2.6 Electrification		100%	
	2.7 Energy consumption		100%	
	3.1 Carpark Ventilation		100%	
	3.4 Clothes Drying		59%	
	3.6 Internal Lighting - Apartments		100%	
	4.2 Renewable Energy Systems - Solar		100%	
	4.4 Renewable Energy Systems - Other		N/A	✦ Scoped Out
No other (non-solar PV) renewable energy is in use.				

IEQ Overall contribution 16.5%

		Minimum required 50%	100%	✓ Pass
	1.1 Daylight Access - Living Areas		100%	
	1.2 Daylight Access - Bedrooms		100%	
	1.3 Winter Sunlight		100%	
	2.1 Ventilation - Natural - Apartments		100%	

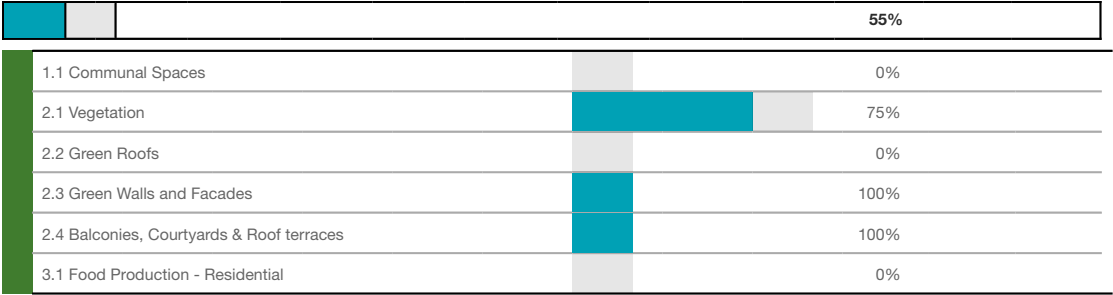
Transport Overall contribution 9.0%

		44%
	1.1 Bicycle Parking - Residential	100%
	1.2 Bicycle Parking - Residential Visitor	100%
	1.3 Bicycle Parking - Convenience Residential	0%
	2.1 Electric Vehicle Infrastructure	0%
	2.2 Car Share Scheme	0%
	2.3 Motorbikes / Mopeds	0%

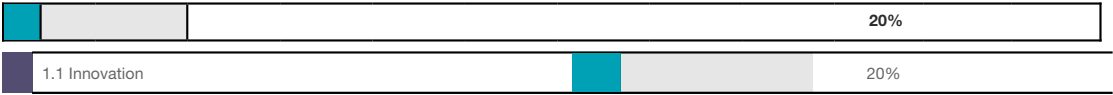
Waste & Resource Recovery Overall contribution 5.5%

		66%
	1.1 Construction Waste - Building Re-Use	0%
	2.1 Operational Waste - Food & Garden Waste	100%
	2.2 Operational Waste - Convenience of Recycling	100%

Urban Ecology Overall contribution 5.5%



Innovation Overall contribution 9.0%



**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Credit breakdown

Management Overall contribution 4.5%

		62%
--	--	-----

1.1 Pre-Application Meeting		0%
Score Contribution	This credit contributes 37.5% towards the category score.	
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?	
Question	Criteria Achieved ?	
Project	No	
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		100%
Score Contribution	This credit contributes 25% towards the category score.	
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?	
Question	Criteria Achieved ?	
Apartment	Yes	
3.1 Metering - Residential		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Have utility meters been provided for all individual dwellings?	
Question	Criteria Achieved ?	
Apartment	Yes	
3.3 Metering - Common Areas		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Have all major common area services been separately submetered?	
Question	Criteria Achieved ?	
Apartment	Yes	
4.1 Building Users Guide		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Will a building users guide be produced and issued to occupants?	
Question	Criteria Achieved ?	
Project	Yes	

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

IWM Overall contribution 22.5%**80% ✓ Pass**

Do you have a reticulated third pipe or an on-site water recycling system?: No

Are you installing a swimming pool?: No

Stormwater profile

Which stormwater modelling software are you using?: Melbourne Water STORM tool

STORM score achieved: 101

Flow: -

Total Suspended Solids: -

Total Phosphorus: -

Total Nitrogen: -

Rainwater tank profile

What is the total roof area connected to the rainwater tank?:

Rainwater Tank 1 582 m²

-

Tank Size:

Rainwater Tank 1 18,000 Litres

Irrigation area connected to tank:

Rainwater Tank 1 200 m²

Is connected irrigation area a water efficient garden?:

Rainwater Tank 1 Yes

Other external water demand connected to tank?:

Rainwater Tank 1 0.0 Litres/Day

-

Fixtures, fittings & connections profile

Building: All Building 1

Showerhead: All 4 Star WELS (>= 6.0 but <= 7.5)

Bath: All Medium Sized Contemporary Bath

Kitchen Taps: All >= 5 Star WELS rating

Bathroom Taps: All >= 5 Star WELS rating

Dishwashers: All >= 5 Star WELS rating

WC: All >= 4 Star WELS rating

Urinals: All Scope out

Washing Machine Water Efficiency: All Occupant to Install

Which non-potable water source is the dwelling/space connected to?: All Rainwater Tank 1

Non-potable water source connected to Toilets: All Yes

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Non-potable water source connected to Laundry (washing machine): All		No
Non-potable water source connected to Hot Water System: All		No
1.1 Potable Water Use		46%   Achieved
Score Contribution	This credit contributes 35.7% towards the category score.	
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.	
Output	Reference	
Project	1888 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	1571 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	1327 kL	
Output	% Reduction in Potable Water Consumption	
Project	29 %	
Output	% of connected demand met by rainwater	
Project	98 %	
Output	How often does the tank overflow?	
Project	Often	
Output	Opportunity for additional rainwater connection	
Project	666 kL	
2.1 Stormwater Treatment		100%   Achieved
Score Contribution	This credit contributes 0.0% towards the category score.	
Criteria	Has best practice stormwater management been demonstrated?	
Output	Min STORM Score	
Project	100	
Output	STORM Score	
Project	101	
3.1 Water Efficient Landscaping		N/A  Scoped Out
Landscape irrigation is connected to the rainwater tank.		
This credit was scoped out	Landscape irrigation is connected to the rainwater tank.	
4.1 Building Systems Water Use		N/A  Scoped Out
Small development		
This credit was scoped out	Small development	

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Operational Energy Overall contribution 27.5%

		Minimum required 50%	75%	✔ Pass
--	--	----------------------	-----	--------

Are you installing any renewable energy system(s) (other than solar photovoltaic)?:		No
Energy Supply:		All-electric
Solar Photovoltaic system profile		
System Size (lesser of inverter and panel capacity): Solar Photovoltaic system 1		10.0 kW peak
Orientation (which way is the system facing)?: Solar Photovoltaic system 1		North
Inclination (angle from horizontal): Solar Photovoltaic system 1		5.0 Angle (degrees)
Dwellings profile		
Building: All		Building 1
Below the floor is:		
Ground or Apartment Carpark		
Apartment 2		
Apartment 3		
Another Apartment 4		
Apartment 5		
Apartment 6		
Apartment 7		
Apartment 8		

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Above the ceiling is:		
3	Apartment 1	Another Occupancy
	Apartment 2	
	Apartment 3	
	Apartment 4	
	Apartment 5	
	Apartment 6	
	Apartment 7	
Apartment 8	Outside	
Exposed sides:		
2	Apartment 1	This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright
	Apartment 2	
	Apartment 3	
	Apartment 4	
	Apartment 5	
	Apartment 8	
	Apartment 6	
Apartment 7		
NatHERS Annual Energy Loads - Heat: All 25.5 MJ/sqm		
NatHERS Annual Energy Loads - Cool: All 17.9 MJ/sqm		
NatHERS star rating: All 8.0		
Type of Heating System: All Reverse cycle space		
Heating System Efficiency: All 2.5 Stars (2019 MEPS)		
Type of Cooling System: All Refrigerative space		
Cooling System Efficiency: All 4 Stars (2019 MEPS)		
Type of Hot Water System: All Electric Storage		
Is the hot water system shared by multiple dwellings?: All No		
% Contribution from solar hot water system: All 0 %		

Clothes	
Line:	
Private	
outdoor	
clothesline	
Apartment	
2	
Apartment	
3	
No	
dryer	
Apartment	
facilities	
Apartment	
5	
Apartment	
6	
Apartment	
7	
Apartment	
8	
Clothes Dryer: All	
Occupant to install	
1.2 Thermal Performance Rating - Residential	
75% ✓ Achieved	
Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Apartment	8.0 Stars
2.1 Greenhouse Gas Emissions	
0%	
Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Apartment	24,588 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	34,050 kg CO2
Output	% Reduction in GHG Emissions
Apartment	-39 %
2.6 Electrification	
100%	
Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	Is the development all-electric?
Question	Criteria Achieved?
Project	Yes

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

2.7 Energy consumption		100%
Score Contribution	This credit contributes 23.5% towards the category score.	
Criteria	What is the % reduction in annual energy consumption against the benchmark?	
Output	Reference Building with Reference Services (BCA only)	
Apartment	231,454 MJ	
Output	Proposed Building with Proposed Services (Actual Building)	
Apartment	155,166 MJ	
Output	% Reduction in total energy	
Apartment	32 %	
3.1 Carpark Ventilation		100%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	If you have an enclosed carpark, is it: (a) fully naturally ventilated (no mechanical ventilation system) or (b) 40 car spaces or less with Carbon Monoxide monitoring to control the operation and speed of the ventilation fans?	
Question	Criteria Achieved ?	
Project	Yes	
3.4 Clothes Drying		59%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a proposed building with proposed services against the benchmark?	
Output	Reference Building	
Apartment	231,454 MJ	
Output	Proposed Building with Proposed Services (Actual Building)	
Apartment	155,166 MJ	
Output	Improvement in energy consumption	
Apartment	29 %	
3.6 Internal Lighting - Apartments		100%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	Is the maximum illumination power density (W/m2) in at least 90% of the relevant building class at least 20% lower than required by clause J7D3(1)(a) and Table J6.2a of the NCC 2022 Vol 1 (Class 2-9)?	
Question	Criteria Achieved ?	
Apartment	Yes	
4.2 Renewable Energy Systems - Solar		100%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?	
Output	Solar Power - Energy Generation per year	
Apartment	11,662 kWh	
Output	% of Building's Energy	
Apartment	27 %	

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

4.4 Renewable Energy Systems - Other		N/A	✦ Scoped Out
		No other (non-solar PV) renewable energy is in use.	
This credit was scoped out	No other (non-solar PV) renewable energy is in use.		

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

IEQ Overall contribution 16.5%

	Minimum required 50%	100%	✔ Pass
--	----------------------	------	--------

Use the BESS Deemed to Satisfy (DtS) method for daylight to Dwellings?:	No
---	----

What approach do you want to use for daylight to Dwellings?:	Use the built in calculation tools
--	------------------------------------

Rooms	
Room Designation:	
DTS living & Apt sitting Apt 3 Living	Living
Apt 1 bedrooms DTS bedroom Apt 3 Bed 2 Apt 6 Bed 2 & 3 Apt 4 & 5 Bed 2 & 3	Bedroom
Quantity:	
DTS living & Apt sitting	8
Apt 1 bedrooms	3
Apt 3 Living	1
Apt 3 Bed 2	13
DTS bedroom	2
Apt 6 Bed 2 & 3	4
Apt 4 & 5 Bed 2 & 3	4
Auto-Pass:	
DTS living & Apt sitting	Yes
DTS bedroom	No
Apt 1 bedrooms	No
Apt 3 Living	
Apt 3 Bed 2	
Apt 6 Bed 2 & 3	
Apt 4 & 5 Bed 2 & 3	
Room Floor Area:	
DTS living & Apt sitting DTS bedroom	0.0 m²
Apt 1 bedrooms	12.3 m²
Apt 3 Living	65.8 m²
Apt 3 Bed 2	10.7 m²
Apt 6 Bed 2 & 3	9.0 m²
Apt 4 & 5 Bed 2 & 3	11.3 m²

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Vertical Angle:		
DTS living & Apt sitting	0.0 Angle (degrees)	
DTS bedroom		
Apt 1 bedrooms	69.0 Angle (degrees)	
Apt 3 Living	54.0 Angle (degrees)	
Apt 3 Bed 2		
Apt 6 Bed 2 & 3	70.0 Angle (degrees)	
Apt 4 & 5 Bed 2 & 3	90.0 Angle (degrees)	
Horizontal Angle:		
DTS living & Apt sitting	0.0 Angle (degrees)	
DTS bedroom		
Apt 1 bedrooms	12.0 Angle (degrees)	
Apt 3 Living	47.0 Angle (degrees)	
Apt 3 Bed 2	44.0 Angle (degrees)	
Apt 6 Bed 2 & 3		
Apt 4 & 5 Bed 2 & 3	90.0 Angle (degrees)	
Window Area:		
DTS living & Apt sitting	0.0 m ²	
DTS bedroom		
Apt 1 bedrooms	6.9 m ²	
Apt 3 Living	17.8 m ²	
Apt 3 Bed 2	2.2 m ²	
Apt 6 Bed 2 & 3	3.0 m ²	
Apt 4 & 5 Bed 2 & 3	2.9 m ²	
Window Orientation:		
DTS living & Apt sitting	-	
DTS bedroom		
Apt 1 bedrooms	West	
Apt 3 Living	South	
Apt 3 Bed 2		
Apt 6 Bed 2 & 3		
Apt 4 & 5 Bed 2 & 3		
Glass Type:		
DTS living & Apt sitting	-	
DTS bedroom		
Apt 1 bedrooms	Clear Double (VLT 0.71)	
Apt 3 Living		
Apt 3 Bed 2		
Apt 6 Bed 2 & 3		
Apt 4 & 5 Bed 2 & 3		
Daylight Criteria Achieved?: All		
	Yes	
1.1 Daylight Access - Living Areas		100%

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Score Contribution	This credit contributes 30% towards the category score.
Criteria	What % of living areas achieve the daylight criteria?
Output	Calculated percentage
Apartment	100 %
1.2 Daylight Access - Bedrooms	100%
Score Contribution	This credit contributes 30% towards the category score.
Criteria	What % of bedrooms achieve the daylight criteria?
Output	Calculated percentage
Apartment	100 %
1.3 Winter Sunlight	100%
Score Contribution	This credit contributes 10% towards the category score.
Criteria	Do 70% of dwellings receive at least 3 hours of direct sunlight in all Living areas between 9am and 3pm in mid-winter?
Question	Criteria Achieved ?
Apartment	Yes
2.1 Ventilation - Natural - Apartments	100%
Score Contribution	This credit contributes 30% towards the category score.
Criteria	What % of dwellings are effectively naturally ventilated?
Question	Percentage Achieved?
Apartment	100 %

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Transport Overall contribution 9.0%

		44%
1.1 Bicycle Parking - Residential		100%
Score Contribution	This credit contributes 22.2% towards the category score.	
Criteria	How many secure and undercover bicycle spaces are there for residents?	
Question	Bicycle Spaces Provided ?	
Apartment	12	
Output	Min Bicycle Spaces Required	
Apartment	8	
1.2 Bicycle Parking - Residential Visitor		100%
Score Contribution	This credit contributes 22.2% towards the category score.	
Criteria	How many secure bicycle spaces are there for visitors?	
Question	Visitor Bicycle Spaces Provided ?	
Apartment	4	
Output	Min Visitor Bicycle Spaces Required	
Apartment	2	
1.3 Bicycle Parking - Convenience Residential		0%
Score Contribution	This credit contributes 22.2% towards the category score.	
Criteria	Are bike parking facilities for residents located at ground or entry level?	
Question	Criteria Achieved ?	
Apartment	No	
2.1 Electric Vehicle Infrastructure		0%
Score Contribution	This credit contributes 22.2% towards the category score.	
Criteria	Are facilities provided for the charging of electric vehicles?	
Question	Criteria Achieved ?	
Project	No	
2.2 Car Share Scheme		0%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Has a formal car sharing scheme been integrated into the development?	
Question	Criteria Achieved ?	
Project	No	
2.3 Motorbikes / Mopeds		0%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?	
Question	Criteria Achieved ?	
Project	No	

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Waste & Resource Recovery Overall contribution 5.5%

		66%
--	--	-----

1.1 Construction Waste - Building Re-Use		0%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?	
Question	Criteria Achieved ?	
Project	No	
2.1 Operational Waste - Food & Garden Waste		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are facilities provided for on-site management of food and garden waste?	
Question	Criteria Achieved ?	
Project	Yes	
2.2 Operational Waste - Convenience of Recycling		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are the recycling facilities at least as convenient for occupants as facilities for general waste?	
Question	Criteria Achieved ?	
Project	Yes	

**This copied document to be made available
for the sole purpose of enabling
its consideration and review as
part of a planning process under the
Planning and Environment Act 1987.
The document must not be used for any
purpose which may breach any
copyright**

Urban Ecology Overall contribution 5.5%

		55%
1.1 Communal Spaces		0%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m ² for each of the first 50 occupants * Additional 0.5m ² for each occupant between 51 and 250 * Additional 0.25m ² for each occupant above 251?	
Question	Common space provided	
Apartment	23.2 m ²	
Output	Minimum Common Space Required	
Apartment	26 m ²	
2.1 Vegetation		75%
Score Contribution	This credit contributes 44.4% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Question	Percentage Achieved ?	
Project	20 %	
2.2 Green Roofs		0%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
2.3 Green Walls and Facades		100%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	Yes	
2.4 Balconies, Courtyards & Roof terraces		100%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Is there a tap and floor waste on every balcony and courtyard (including any roof terraces)?	
Question	Criteria Achieved ?	
Apartment	Yes	
3.1 Food Production - Residential		0%

This copied document to be made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any copyright

Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	What area of space per resident is dedicated to food production?
Question	Food Production Area
Apartment	0.0 m²
Output	Min Food Production Area
Apartment	7 m²

Innovation Overall contribution 9.0%

		20%
--	--	-----

Project Initiatives		
Initiative:		
ESD As-built verification		O
IEQ sensors		O
Description:		
ESD As-built verification	An ESD professional will be engaged throughout the design and construction process. The ESD professional will perform a minimum of 2 site inspections during the construction phase to ensure suitable implementation of the ESD initiatives. Any deficiencies compared to the endorsed SMP will be escalated to the project team and resolved.	
IEQ sensors	IEQ sensors will be installed to all apartments. The sensors are to measure at a minimum VOC levels, humidity, PPM and temperature.	
Points Targeted:		
ESD As-built verification		1
IEQ sensors		1
Points:		
ESD As-built verification		-
IEQ sensors		-
1.1 Innovation		20%
Score Contribution		
This credit contributes 100% towards the category score.		
Criteria		
What percentage of the Innovation points have been claimed (10 points maximum)?		

Disclaimer

The Built Environment Sustainability Scorecard (BESS) has been provided for the purpose of information and communication. While we make every effort to ensure that material is accurate and up to date (except where denoted as 'archival'), this material does in no way constitute the provision of professional or specific advice. You should seek appropriate, independent, professional advice before acting on any of the areas covered by BESS.

The Municipal Association of Victoria (MAV) and CASBE (Council Alliance for a Sustainable Built Environment) member councils do not guarantee, and accept no legal liability whatsoever arising from or connected to, the accuracy, reliability, currency or completeness of BESS, any material contained on this website or any linked sites