

SUSTAINABLE MANAGEMENT PLAN

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PROPOSED MIXED-USE
DEVELOPMENT

846 – 858 Glenferrie Road,
Hawthorn

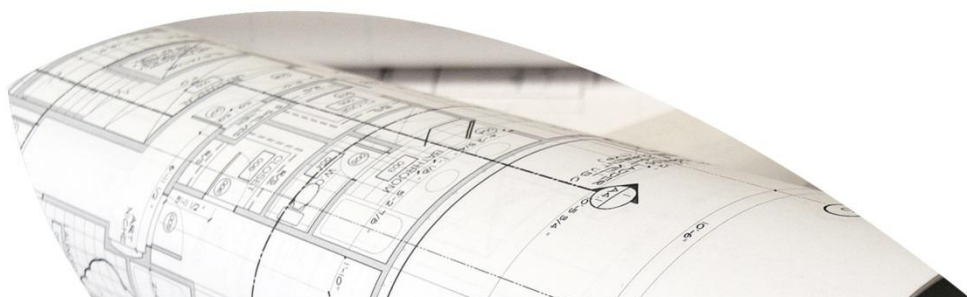
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GIW24020
Revision C

Prepared for:
OP Glenferrie Pty Ltd

5 May 2026

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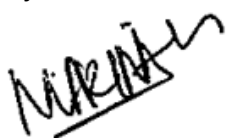
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Revision History

Revision Number	Date Issued	Author	Approved	Comments
A	27/2/2026	MS	IB	Draft
B	27/04/2026	MS	IB	Final
C	05/05/2026	MS	IB	Final

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1. Introduction

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Project Information

GIW Environmental Solutions Pty Ltd ("GIW") has been engaged by OP Glenferrie Pty Ltd to provide Environmentally Sustainable Design (ESD) consulting services for the proposed mixed use development at 846-858 Glenferrie Road, Hawthorn.

The proposed development will include 78 apartments and 2 retail tenancies constructed over 16 levels plus basement carpark and will consist of the following:

- 31 x 2 bedroom apartments
- 47 x 3 bedroom apartments
- 712m² retail

The site located at 846-858 Glenferrie Road, Hawthorn has an approximate surface area of 1,625m² and is currently the location of 3 double storey brick dwellings. Distance from the site to Melbourne CBD is approximately 7.1km.



Figure 1 - Pre-existing sites at 846-858 Glenferrie Road, Hawthorn.

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Statutory Requirements

This Sustainable Management Plan (SMP) has been prepared to inform City of Boroondara of the proposed development's sustainability credentials and performance targets. The project team is committed to achieving a building solution which responds to City of Boroondara sustainability objectives and obligations..

Development Type	Application Requirement	Example Tools
Development of 10 or more dwellings.	Sustainability Management Plan (SMP)	BESS Green Star MUSIC STORM

Further to the above, this SMP also responds to Victoria Planning Provisions VC216 – 15.01-2S.

Built Environment Sustainability Scorecard (BESS)

The proposed mixed-use development will be assessed against the Built Environment Sustainability Scorecard (BESS) guidelines. The BESS tool addresses nine key environmental categories as follows:

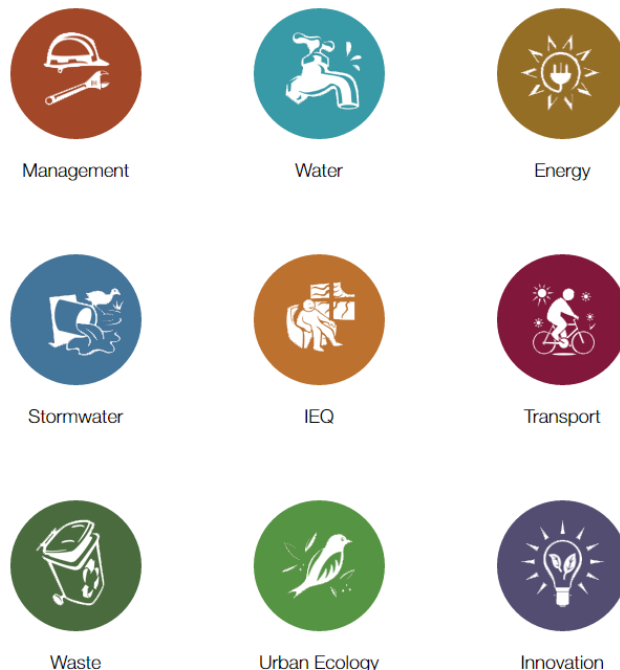


Figure 2 - BESS Environmental Categories (www.bess.net.au)

All ESD measures described under the nine key environmental categories are to be suitably incorporated into relevant project documentation at the appropriate project phase.

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Responsibilities & Implementation

OP Glenferrie Pty Ltd will be responsible for the suitable implementation of the requirements of this report throughout the design and development phases. Should the development be sold the responsibility will pass to the new owner. At such time as a builder is novated or a building contract is put in place the builder will be responsible for implementation during the construction phase. At occupancy, the Owners Corporation and individual lot owners and or tenants will be responsible for the correct use of installed equipment and building systems in line with the provided Building User's Guide.

Sources of Information

The following 'Sources of Information' have been used to guide the design solutions:

- Wardle Studio – Project No. 2523 – Town Planning Issue (Rev 01 dated 02/04/2026)
- Municipal Association of Victoria - SDAPP Explained; Building Design for a Sustainable Future
- Built Environment Sustainability Scorecard (BESS)
- CSIRO 1999, Urban Stormwater – Best Practise Environmental Management Guidelines

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2. ESD Summary

The proposed mixed-use development at 846-858 Glenferrie Road, Hawthorn will implement the following ESD initiatives:

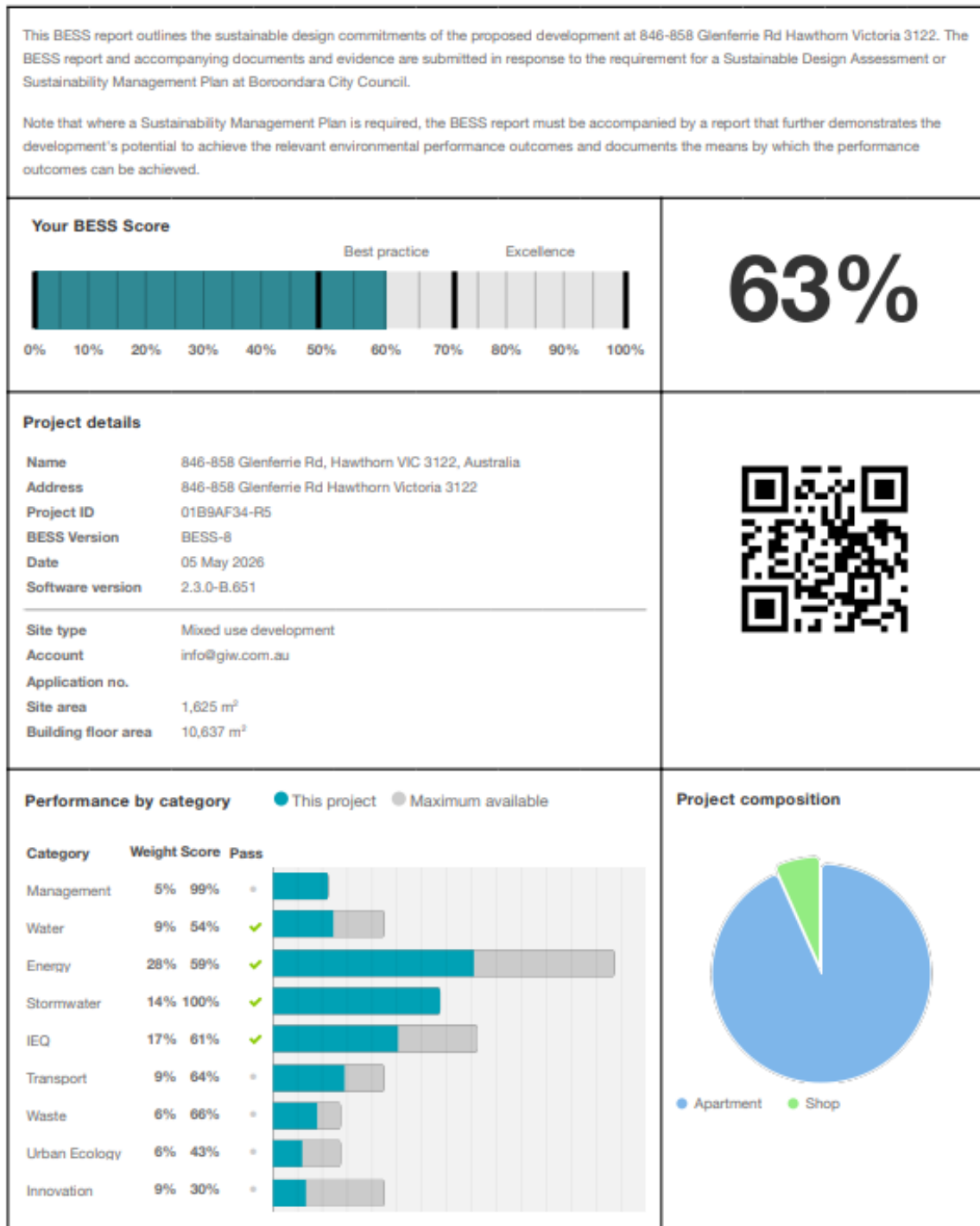
1. The project achieves a total BESS score of 63% with no mandatory category (IEQ, Energy, Water, Stormwater) below 50%.
2. 85% (66 out of 78) of the development's apartments are effectively naturally ventilated.
3. Daylight modelling has been conducted for a representative sample of apartments. The summary result is as follows:
 - 85% of living floor area achieves >90% above DF 1
 - 90% of bedroom floor area achieves >90% above DF0.5
4. The non-residential areas are targeting a 2% DF to 33% of the nominated area.
5. 37% (29 out of 78) of apartments achieve at least 3 hours of sunlight.
6. The development is provided with a comprehensive shading strategy.
7. The development is to achieve a 7.0 Star average NatHERS Energy Rating result.
8. The non-residential areas aim to reduce heating and cooling energy consumption below the reference case (BCA Section J 2022).
9. The development is to utilise a heat pump hot water system.
10. A 15kW solar PV system is to be located on the roof of the development.
11. Individual cold water, hot water and electricity meters will be provided to the apartments and communal areas.
12. Water efficient fittings and fixtures are applied throughout.
13. A 30,000-litre rainwater tank will harvest rainwater from the upper roof, L14 roof and all exposed terraces (excluding planters). This tank will be connected to all GF-L3 toilets and landscape irrigation.
14. A Blue Factor result of 110% is achieved.
15. In total 78 bicycle spaces are to be provided for residents across ground and basement levels.
16. In total 16 bicycle spaces are to be provided for residential visitors.
17. In total 6 bicycle spaces are to be provided for retail visitors.
18. 197.4m² of communal space will be provided at ground level and basement 2.

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3. BESS Performance

The project achieves a total BESS score of 63% 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.



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4. ESD Assessment

Management

Council ESD objectives:

- To encourage a holistic and integrated design and construction process and ongoing high performance.

Council Best Practice Standard

Criteria		Construction and Building Management Actions
Pre-Application Meeting	To ensure appropriate sustainable design principles and strategies are considered from the preliminary design stage of each development.	GIW has been involved in a pre-application meeting with Council on 12/11/2024.
Metering	To provide building users with information that allows monitoring of energy and water consumption	Electricity, hot water and cold water metering is to be provided to each individual apartment and retail tenancy. Lighting and general power to common areas is to be separately metered to quantify energy used for common areas spaces. Additionally, the main electrical switchboard to contain at least two empty three-phase circuit breaker slots and four DIN rail spaces labelled to indicate the use of each space for a battery system.
Building User's Guide	To encourage and recognise initiatives that will help building users to use the building more efficiently.	A Building User's Guide will be provided to all occupants explaining the correct use of installed equipment and building systems. This shall cover at a minimum: - Energy and Environmental Strategy - Options for purchasing a ≥3 Star Washing Machine - Monitoring and Targeting - Building Services - Transport Facilities - Materials and Waste Policy - Expansion/Re-fit Considerations - References and Further Information

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Water

Council ESD objectives:

- To ensure the efficient use of water
- To reduce total operating potable water use
- To encourage the collection and reuse of stormwater
- To encourage the appropriate use of alternative water sources (e.g. grey water)
- To minimize associated water costs

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Criteria	Development Provision
Potable Water Reduction	WELS 4 Star - Toilets WELS 5 Star - Kitchen Taps WELS 6 Star - Bathroom Taps WELS 4 Star - Shower-head WELS 5 Star - Dishwasher  To reduce total potable water use due through the use of efficient fixtures, appliances, and the use of rainwater.
Rainwater Collection & Reuse	A 30,000-litre rainwater tank will harvest rainwater from the upper roof, L14 roof and all exposed terraces (excluding planters). This tank will be connected to all GF-L3 toilets and landscape irrigation. It is estimated that this will save more than 355kL of potable water every year and meet 60% of the demand in these areas. Stormwater drainage mechanism and suitable filtration is to be determined by the hydraulics services engineer at the design development phase. Refer Appendix A – WSUD Response
Landscape Irrigation	To ensure the efficient use of water and to reduce total operating potable water use through encouraging water efficient landscape design. Landscape irrigation demand will be connected to the rainwater tank. ADVERTISED PLAN

Council Best Practice Standard

Criteria	Development Provision
Building System Water Use Reduction	Ensure the efficient use of water, to reduce total operating potable water use and to encourage the appropriate use of alternative water sources for cooling and fire testing systems. >80% of fire test water (e.g. hydrant pump test water or SCV annubar test) is to be reused on site, either within the fire test system itself, irrigation, toilet flushing, or other non-potable uses. Final coordination and confirmation of these options will occur with the fire engineer at a later stage. The proposed development is to incorporate air-cooled HVAC systems for both the residential and non-residential areas within the development.

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Energy

Council ESD objectives:

- To ensure the efficient use of energy
- To reduce total operating greenhouse emissions
- To reduce energy peak demand
- To reduce associated energy costs

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Criteria		Development Provision					
ADVERTISED PLAN		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 7.0 Star rating, with no unit achieving below 6.0 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)		
		62 Moorabbin	Average: 82 Maximum: 91		Average: 25 Maximum: 21 (BADS)		
Thermal Performance Rating - Residential	To reduce energy needed to achieve thermal comfort in summer and winter - improving comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.	The apartments are currently achieving a 7.6 Star average. The below sample ratings demonstrate the developments ability to achieve these requirements. Refer Appendix A for Preliminary FirstRate5 Certificates.					
		Apartment No.	ACE Total MJ/M ²	ACE Heating MJ/M ²	ACE Cooling MJ/M ²	ACE NCFA M ²	Star Rating
		101	42.4	28.7	13.7	125.2	8.7
		206	60.8	50.3	10.5	82	7.9
		301	69.3	59.3	10	121.7	7.6
		403	72.8	57.4	15.4	134.9	7.4
		405	96.9	76.1	20.8	85.6	6.6
		504	59.7	38.7	21	185.7	7.9
		606	75.1	67.4	7.7	98.4	7.4
		702	63.7	47.7	16	116.9	7.8
		903	54.1	34.3	19.8	136.9	8.2

Council Best Practice Standard

Criteria	Development Provision					
	1104	62.8	49	13.8	119.2	7.9
	1301	111.9	94.1	17.8	112.4	6
	1501	64.6	45.7	18.9	127.3	7.8
	Average	69.5	54.1	15.5	120.5	7.6

*Apartments are assessed using FirstRate5 v5.5.5

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.

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Element	Material	Insulation Value
Floor (where exposed below)	Concrete Slab	R1.75
External Walls	Lightweight	R2.5
Internal Walls	Plasterboard	R1.8 / R2.5
	Concrete	R1.8
Roof (where balcony above)	Concrete Slab	R1.75
Lower Roof (L14)	Concrete Slab	R4.6
Upper Roof	Concrete Slab	R4.6 (applied above the slab)
Fixed Windows	Aluminium Framed, Double Glazed, Argon Filled, Clear	Total System – U-Value: 3.42 – SHGC: 0.61
Sliding Doors	Aluminium Framed, Double Glazed, Argon Filled, Clear	Total System – U-Value: 3.81 – SHGC: 0.55
Awning Windows	Aluminium Framed, Double Glazed, Argon Filled, Clear	Total System – U-Value: 4.88

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	Fixed Windows (applicable to apartment 504, 702, 903 and 1501)	Thermally Broken, Aluminium Framed, Double Glazed, Argon Filled, Low-E, Clear	Total System - U-Value: 2.09 - SHGC: 0.51
	Sliding Doors (applicable to apartment 504, 702, 903 and 1501)	Thermally Broken, Aluminium Framed, Double Glazed, Argon Filled, Low-E, Clear	Total System - U-Value: 2.96 - SHGC: 0.49
	Awning Windows (applicable to apartment 504, 702, 903 and 1501)	Thermally Broken, Aluminium Framed, Double Glazed, Argon Filled, Low-E, Clear	Total System - U-Value: 2.50 - SHGC: 0.41
Thermal Performance Rating – Non-Residential	To reduce energy needed to achieve thermal comfort in summer and winter - improving comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.	The non-residential areas aim to reduce heating and cooling energy consumption below the reference case (BCA Section J 2022). Refer Appendix C - Preliminary Part J4D6 Façade Calculator.	
Electrification	To support the transition to renewable energy sources.	The development will be all-electric with no gas connection.	
HVAC System	To ensure the efficient use of energy and to reduce consumption of electricity.	Inverter split system units are to be installed and sized to maintain conditions of the habitable areas. Heating and cooling systems are to have an Energy Efficiency Ratios (EER) not less than 85% of the EER of the most efficient equivalent unit available (type & capacity). VRV / VRF systems with a COP of 3.4 are to be installed to the	

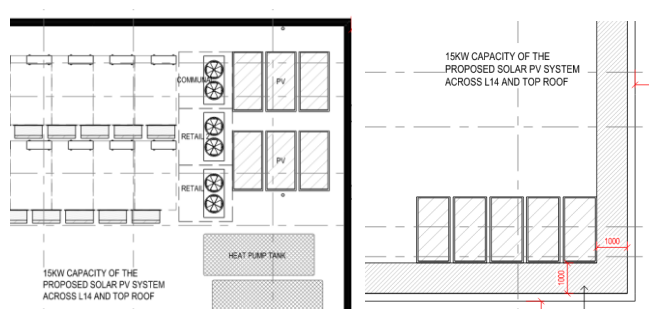
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Criteria		Development Provision
		non-residential areas.
Hot Water System	To ensure the efficient use of energy and to reduce consumption and greenhouse emissions from water heating.	The development is to utilise a heat pump hot water system.
Car Park Ventilation	To ensure the efficient use of energy, reduce total operating greenhouse gas emissions and to reduce energy peak demand.	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. The mechanical services engineer is responsible for the design and specification of the system. The contractor is to procure and install the specified system. Maintenance requirements of the CO sensor system are to be included in the O&M manual.
Clothes Drying	Ensure the efficient use of energy and to reduce energy consumption and greenhouse emissions associated with clothes drying	Nil. 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 Lighting - Residential	To ensure the efficient use of energy, to reduce energy consumption, greenhouse emissions associated with artificial lighting, and to reduce energy peak	The maximum illumination power density (W/sqm) is at least 20% lower than NCC 2022 requirements. Lighting power density shall be as follows: • Dwellings: No greater than average 4W/m² • POS: No greater than average 3.2W/m² • Back of house and indoor car parks: No greater than average 1.6W/m² All common area, external and carpark lighting is to be controlled with daylight, motion sensors or timers (whichever is

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Criteria	Development Provision	
	demand.	deemed appropriate).
Internal Lighting – Non-Residential	To ensure the efficient use of energy, to reduce energy consumption, greenhouse emissions associated with artificial lighting, and to reduce energy peak demand.	The maximum illumination power density (W/m²) in the non-residential areas meets the requirements of Table J7D3a of the NCC 2022 Section J. Lighting power density shall be as follows: Retail: No greater than average 14W/m²
Renewable Energy Systems - Solar	To encourage on-site renewable energy generation and reduce greenhouse emissions.	A 15kW Solar PV system is to be located on the roof of the proposed development. The system is expected to generate approximately 20,102kWh.  Location Solar PV System Refer Appendix D – Renewable Energy

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Stormwater

Council ESD objectives:

- To reduce the impact of stormwater run-off
- To improve the water quality of stormwater run-off
- To achieve best practice stormwater quality outcomes
- To incorporate water sensitive urban design principles

Council Best Practice Standard

Criteria	Development Provision
Stormwater Treatment To minimise negative environmental impacts of stormwater runoff and maximise onsite re-use of stormwater.	The Blue Factor tool has been applied to determine performance relative to Best Practice Environmental Management Guidelines (Victoria Stormwater Committee, 1999). As per City of Boroondara Planning Scheme - Clause 53.18 Stormwater Management in Urban Areas, the development is required to achieve a compliant Blue Factor result. A Blue Factor result of 110% is achieved via the following: • Rainwater collection off the upper roof, L14 roof and all exposed terraces (excluding planters) is to be directed into a 30,000-litre rainwater tank connected to all GF-L3 toilets and landscape irrigation. Refer Appendix A – WSUD Response.

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Indoor Environment Quality

Council ESD objectives:

- to achieve a healthy indoor environment quality for the wellbeing of building occupants.
- to provide a naturally comfortable indoor environment will lower the need for building services, such as artificial lighting, mechanical ventilation and cooling and heating devices.

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Criteria		Development Provision	
Daylight Access - Residential	To provide a high level of amenity and energy efficiency through design for natural light.	Daylight modelling has been conducted for a representative sample of apartments. The summary result is as follows:	
		% of living floor area above DF 1.0	% of bedroom floor area above DF 0.5
		85	90
		Refer Appendix E - Daylight Modelling.	
Winter Sunlight	To provide a high level of amenity and reduce need for artificial heating in winter.	37% (29 out of 78) of apartments achieve at least 3 hours of sunlight.	
Daylight Access – Non-Residential	To provide a high level of amenity and energy efficiency through design for natural light.	The non-residential areas are targeting a 2% DF to 33% of the nominated area.	
Minimal Internal Bedrooms	90% of bedrooms have an external window.	NIL internal bedrooms.	
Effective Natural Ventilation	To provide fresh air and passive cooling opportunities.	85% (66 out of 78) of the development’s apartments are effectively naturally ventilated. Apartments are provided with windows on opposite or adjacent facades or are effective single sided ventilated.	

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Typical natural cross-ventilated apartment

Ventilation –
Non-
Residential

To provide fresh
air and passive
cooling
opportunities.

Outdoor air rate for the commercial areas is to be 50% increased
compared to AS 1668:2012.
This is to be included in the mechanical design and
specifications.

Thermal
Comfort -
Residential

To provide
comfortable
indoor spaces
and reduce
energy needed
for heating and
cooling.

The development is provided with a comprehensive shading
strategy:



L1-15 recessed windows are
shaded by the overhanging
level above



L1-3 east and west oriented
perimeter windows are sized
to limit solar heat gains and
winter heat loss

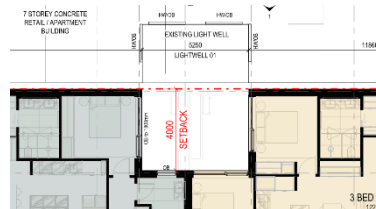
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L1-5 windows within the north light court are shaded by the built form and adjacent building.

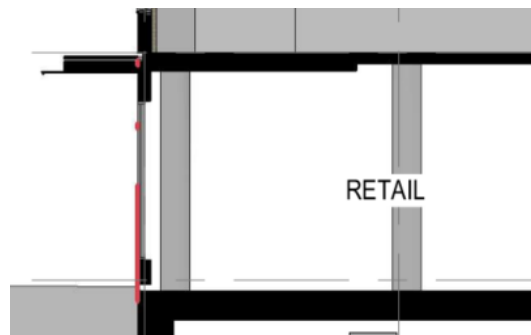


L1-2 north oriented windows within east light court are shaded by the built form and are sized to limit solar heat gains and winter heat loss.

The development is provided with a comprehensive shading strategy:

Thermal Comfort – Non-Residential

To provide comfortable indoor spaces and reduce energy needed for heating and cooling.



Ground floor west oriented retail windows are shaded by 1,500mm deep overhangs.

None of the regular use areas of the commercial areas are provided with ceiling fans.

Air Quality – Non-Residential

All paints and adhesives meet the maximum total indoor pollutant emission limits.

All internally applied paints adhesives and sealants are to have a low or ultra-low VOC content in line with Green Star Buildings V1 Credit 13.

All carpet meets the maximum total indoor

All internally applied carpets are to have a low VOC content in line with Green Star Buildings V1 Credit 13.

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pollutant emission limits.	
All engineered wood meets the maximum total indoor pollutant emission limits.	All internally applied engineered wood products are to have low formaldehyde levels in line with Green Star Buildings V1 Credit 13.

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Transport

Council ESD objectives:

- To minimise car dependency.
- To ensure that the built environment is designed to promote the use of public transport, walking and cycling.

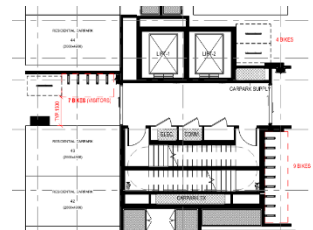
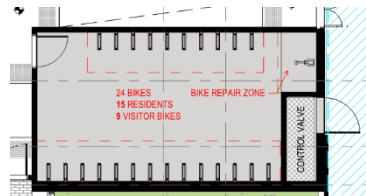
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Criteria

Development Provision

Bicycle Parking
– Residential &
Residential
Visitors

To encourage
and recognise
initiatives that
facilitate cycling.



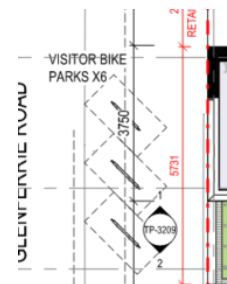
(Typical)

In total 78 bicycle spaces
are to be provided for
residents across ground
and basement levels.

In total 16 bicycle spaces
are to be provided for
residential visitors.

Bicycle Parking
– Non-
Residential &
Non-
Residential
Visitors

To encourage
and recognise
initiatives that
facilitate cycling.



In total 6 bicycle spaces are to be provided for retail visitors.

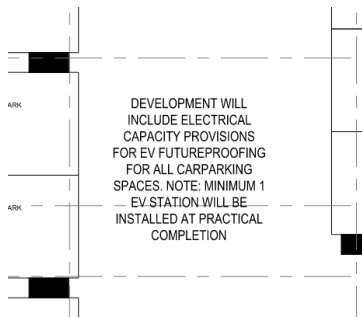
End of Trip
Facilities –
Non-
Residential

To minimise car
dependency and
to ensure that the
built environment
is designed to
promote the use
of public
transport,
walking and

Nil.

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Council Best Practice Standard

Criteria	Development Provision	
cycling.		Min. 1 charging point for electrical vehicles is integrated in the proposed development.
ADVERTISED PLAN To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling. Electric Vehicle Infrastructure	 Location of electric charging point. Future infrastructure for electrical charging points is incorporated in the services design including dedicated electrical distribution boards (DB-EV) for EV charging on every floor of the parking lot per NCC 2022 Table J9D4. Each DB-EV must be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand. When associated with a Class 2 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 11:00 pm to 7:00 am daily. Additionally, each DB-EV must be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in 100% of the car parking spaces associated with a Class 2 building.	
Car Share Scheme To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	Nil.	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

Council Best Practice Standard

Criteria	Development Provision
Motorbikes / Mopeds	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling. Nil.

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Materials

ESD objectives:

- Use of low embodied energy materials.
- Encourage use of recycled and reusable materials in building construction and undertake adaptive reuse of buildings, where practical.

Council Best Practice Standard

Criteria	Development Provision	
Embodied Energy	Limited use of high embodied energy metals and materials, especially in a design with intended high churn (e.g. retail)	The design will seek to limit the use of high embodied energy metal finishes. At least 40% of coarse aggregate in the concrete is crushed slag aggregate or other alternative materials (measured by mass across all concrete mixes in the project).
Structural and Reinforcing Steel	Commitment to source structural and reinforcing steel from a responsible steel maker	The building's steel (by mass) is to be sourced from a Responsible Steel Maker with: • a currently valid and certified ISO 14001 Environmental Management System (EMS) in place; and • is a member of the World Steel Association's (WSA) Climate Action Programme (CAP)
Sustainable Timber	Commitment to source timber from sustainably managed source, with proof of audit trail.	Where timber is to be used, such timbers are to accord with the GBCA's 'Essential' criteria for forest certification. This may include FSC and / or PEFC Certification which are both internationally recognised schemes ensuring that timber is sourced from sustainable sources. Alternatively, recycled timber will be used.
PVC	Commitment to source best practice PVC products	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.
Sustainable Products	Commitment to source products that meet the transparency and sustainability requirements	The project will incorporate products that meet the transparency and sustainability requirements where deemed appropriate. This includes the following: reused products, recycled content products, environmental product declarations, third party certified and stewardship programs.

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Waste Management

Council ESD objectives:

- To ensure waste avoidance, reuse and recycling during the design, construction and operation stages of development.
- To ensure long term reusability of building materials.
- To meet Councils' requirement that all multi-unit developments must provide a Waste Management Plan in accordance with the *Guide to Best Practice for Waste Management in Multi-unit Developments 2010*, published by Sustainability Victoria.

Council Best Practice Standard

Criteria	Development Provision	
Building Re-use	To ensure waste avoidance, reuse and recycling during the design.	None of the existing structure is re-used.
Construction and Demolition Waste	To reduce construction waste going to landfill	At least 80% of the waste generated during construction and demolition has been diverted from landfill.
Food & Garden Waste	To ensure waste avoidance, reuse and recycling during the operational life of the building.	Green waste storage is provided in the GF waste rooms.
Convenience of Recycling	To ensure waste avoidance, reuse and recycling during the operational life of the building.	Separate general, recycling, glass and organic waste storage will be provided at GF waste rooms. Each tenancy is to be provided with separate general, recycling and food and organics waste bins. This requirement is to be included in the owners corporation rules or lease agreement.



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Council Best Practice Standard

Criteria	Development Provision
	Kitchen joinery for the residential units is to provide appropriate spatial allowance for food and organics, general and recycling waste collection.

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Urban Ecology

Council ESD objectives:

- To protect and enhance biodiversity.
- To provide sustainable landscaping.
- To protect and manage all remnant indigenous plant communities.
- To encourage the planting of indigenous vegetation.

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Council Best Practice Standard

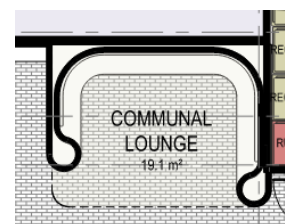
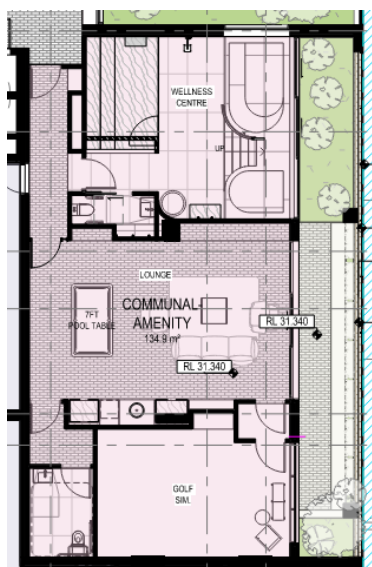
Criteria

Development Provision

197.4m² of communal space will be provided at ground level. Communal space will include the following amenities: lounge, seating, wellness centre including cold plunge and sauna, pool table, kitchenette and dining areas, plus outdoor areas, communal lounge, communal workshop and dog wash.

Communal
Space

To encourage and recognise initiatives that facilitate interaction between building occupants.



Communal space will be provided at ground floor and basement 2.

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Vegetation

To encourage and recognise the use of vegetation and landscaping within and around developments.

Planter boxes are to be located all terraces throughout the building.

The total area of vegetation is 10% of the site area.

Council Best Practice Standard

Criteria	Development Provision	
Green Walls / Roof	To encourage the appropriate use of green roofs, walls and facades to mitigate the impact of the urban heat island effect.	Nil.
Private Open Space - Balcony / Courtyard Ecology	To encourage plants in a healthy ecological context to be grown on balconies and in courtyards.	All balconies or private open space have been provided with a tap and floor waste allowing residents to cultivate their own gardens.
Food Production - Residential	To encourage the production of fresh food on-site.	Nil.
Heat Island Effect	To reduce the contribution of the project site to the 'heat island effect	Roof are to have a three year SRI of minimum 60 Unshaded hard-scaping elements are to have a three year SRI of minimum 40.

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Innovation

Council ESD objectives:

- To encourage innovative technology, design, and processes in all development, which positively influence the sustainability of buildings.

Council Best Practice Standard

Criteria	Development Provision	
Carbon Neutral Ready Development	To reduce environmental impact and contribute to a sustainable future by minimizing carbon emissions.	The proposed development will be established with a carbon neutral power agreement between developer, owner's corporation, and electrical retailer to provide GreenPower for all energy consumed by building (including communal areas, apartments and retail tenancy). This agreement will be maintained for a minimum of 10 years.
Bicycle Repair Station	To provide secure, convenient, and accessible bicycle repair facilities to support active transport and cycling infrastructure.	Bicycle Repair Station Inclusion of secure, convenient and accessible equipment including repair stands, pumps and tools for fixing bicycles.

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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.

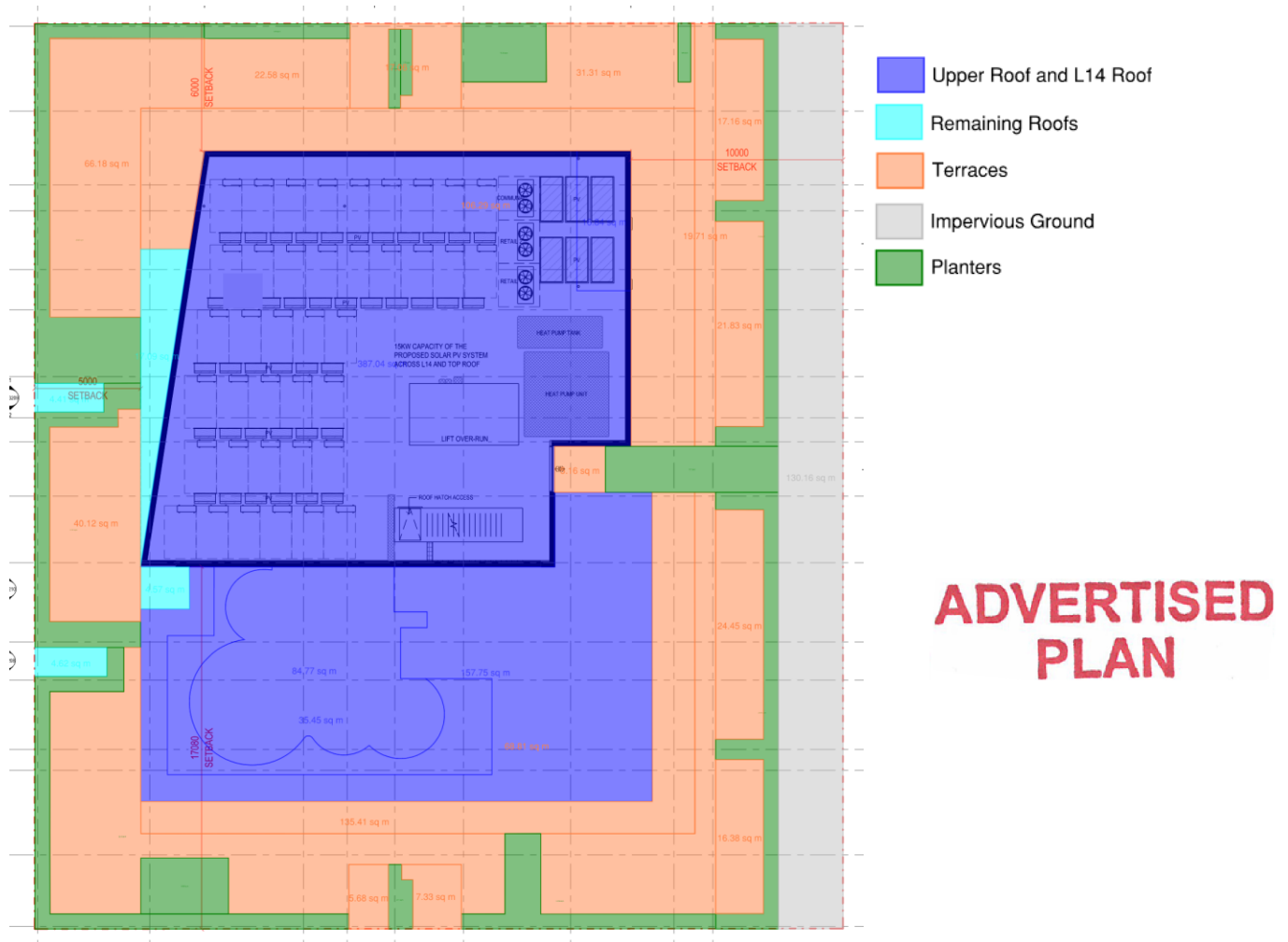


Figure 3- Mark-up of water catchment and impervious areas

Blue Factor Rating

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

- Rainwater collection off the upper roof, L14 roof and all exposed terraces (excluding planters) directed into a 30,000-litre rainwater tank connected to all GF-L3 toilets 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:

846-858 Glenferrie Road, Hawthorn- Option-1-260424 SMP Rev B

The proposed stormwater treatments provide 'deemed to comply' compliance with the minimum planning requirement for total nitrogen but does not comply with all the relevant objectives for management of stormwater flows on-site.

110%
SCORE

Project details

Name	846-858 Glenferrie Road, Hawthorn- Option-1-260424 SMP Rev B
Project ID	64B93761
Street address	846 Glenferrie Rd, Hawthorn VIC 3122, Australia
Municipality	Boroondara
Site area	1625 m ²
Planning Number	

**ADVERTISED
PLAN**

Flow and pollutant load reductions

Item	Result	Target	
Mean annual runoff volume harvested or evapotranspired (%)	44%	>26%	✓
Mean annual runoff volume infiltrated or filtered (%)	0%	>10%	✗
Total suspended solids (%)	69%	>80%	✗
Total phosphorus (%)	61%	>45%	✓
Total nitrogen (%)	49%	>45%	✓
Total gross pollutants (%)	88%	>70%	✓

WSUD Strategy

The development will include the provision of a 30,000-litre rainwater tank and associated pump in the basement 3 carpark. The rainwater tank is to be connected to all GF-L3 toilets and landscape irrigation.

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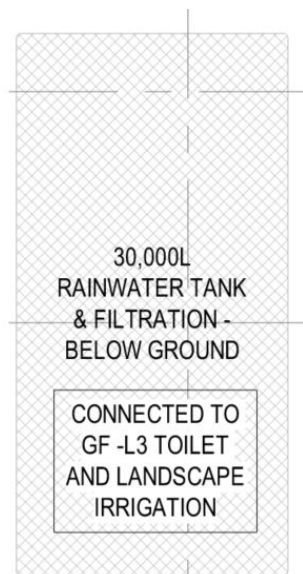


Figure 4 – Location Rainwater Tank

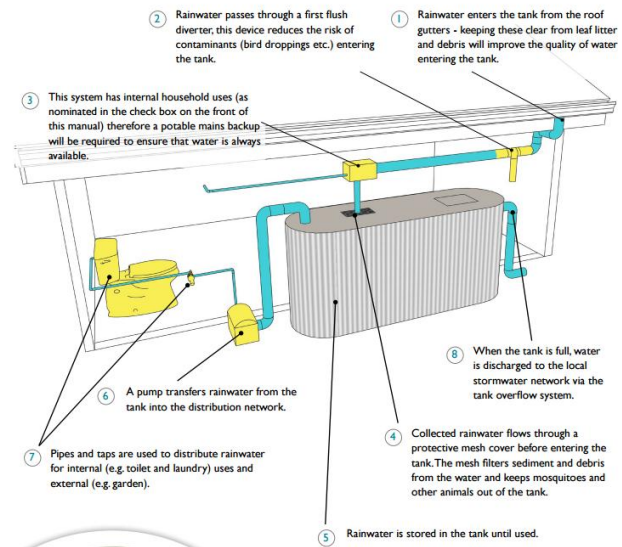


Figure 5 – Cross-section Tank (City of Port Phillip)

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Rainwater Reuse

Inputs

Catchment Area	1287 sqm
Number of Occupants	70
Irrigation Area	178 sqm
Tank Capacity	30,000 Litre

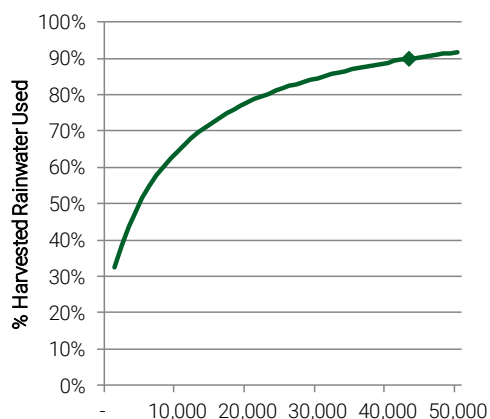
Outputs

% Served by Rainwater	60.0%
% Harvested Rainwater Used	84.9%
Total Potable Water Saved	354,625 Litre

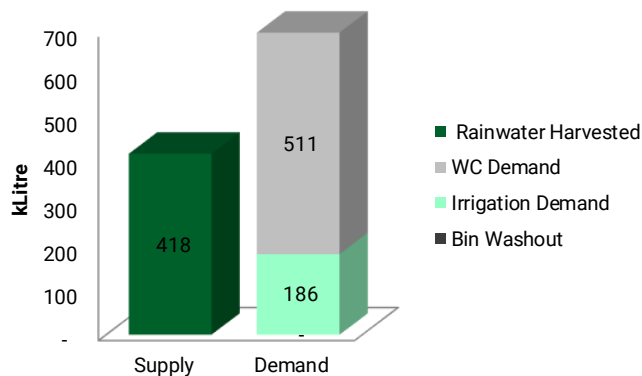
Rainwater Balance (Monthly Averages)

Month	Rainwater Harvested (L)	Irrigation Demand (L)	WC Demand (L)	Bin Washout (L)
Jan	28,662	27,540	43,400	0
Feb	34,868	24,948	39,200	0
Mar	31,128	12,797	43,400	0
Apr	34,235	12,251	42,000	0
May	33,814	12,641	43,400	0
Jun	34,600	5,760	42,000	0
Jul	27,639	5,869	43,400	0
Aug	34,802	5,869	43,400	0
Sep	36,208	16,838	42,000	0
Oct	37,648	17,156	43,400	0
Nov	47,303	16,732	42,000	0
Dec	36,895	27,753	43,400	0
Total	417,803	186,155	511,000	0
Equivalent STORM tool		26		0

Tank Sizing



Supply-Demand



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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

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Blue Factor Report

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Project # 64B93761
846-858 Glenferrie Road, Hawthorn- Option-1-260424 SMP Rev B
Gary Wertheimer - info@giw.com.au
846 Glenferrie Rd, Hawthorn VIC 3122, Australia
24 April 2026 4:21 a.m.

 **BLUE FACTOR**®

ADVERTISED
PLAN

846-858 Glenferrie Road, Hawthorn- Option-1-260424 SMP Rev B

The proposed stormwater treatments provide 'deemed to comply' compliance with the minimum planning requirement for total nitrogen but does not comply with all the relevant objectives for management of stormwater flows on-site.

110%

SCORE

Project details

	846-858 Glenferrie Road, Hawthorn- Option-1-260424
Name	SMP Rev B
Project ID	64B93761
Street address	846 Glenferrie Rd, Hawthorn VIC 3122, Australia
Municipality	Boroondara
Site area	1625 m ²
Planning Number	

Flow and pollutant load reductions

Item	Result	Target	
Mean annual runoff volume harvested or evapotranspired (%)	44%	>26%	✓
Mean annual runoff volume infiltrated or filtered (%)	0%	>10%	✗
Total suspended solids (%)	69%	>80%	✗
Total phosphorus (%)	61%	>45%	✓
Total nitrogen (%)	49%	>45%	✓
Total gross pollutants (%)	88%	>70%	✓

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Configuration 1



Upper Roof 404m2



Terraces Paved, 605m2



Rainwater Tank 1
Rainwater tank retention volume in kilolitres: 24

Configuration 2



L14 Roof 278m2



Rainwater Tank 2
Rainwater tank retention volume in kilolitres: 6

Catchments



Upper Roof 404m2



Terraces Paved, 605m2



L14 Roof 278m2



Impervious Ground Paved, 130m2

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Planters Pervious (garden and lawn), 178m2



Remaining Roofs 30m2

Treatments



Rainwater Tank 1

Rainwater tank retention volume in kilolitres: 24

137%



Rainwater Tank 2

Rainwater tank retention volume in kilolitres: 6

79%

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Building 1 Residential Apartment, 203 bedroom(s)

Water sources	I want to calculate my water use based on fixtures and fittings
Basin taps - Primary water source	Mains water
Basin taps - Efficiency	5 star WELS rating
Showers - Primary water source	Mains water
Showers - Efficiency	3 star WELS rating (> 6 but < 7.5 litres per minute)
Clothes Washer - Primary water source	Mains water
Clothes Washer - Efficiency	3 star WELS rating (minimum requirement)
Toilets connected to mains water	115
Toilets connected to rainwater	53
Toilets connected to recycled water	0
Toilets efficiency	4 star WELS rating
Garden water use	Garden water demands are in use
Garden primary water source	Rainwater
Irrigated garden area supplied by:	
• Mains	0 m ²
• Rainwater Tank	167 m ²
• Recycled Water	0 m ²
Garden water use efficiency	Medium

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Building 2 Non-Residential BCA Class 6 - Retail/Food,
8 employee(s)

Water sources	I want to calculate my water use based on fixtures and fittings
Basin taps - Primary water source	Mains water
Basin taps - Efficiency	5 star WELS rating
Showers - Primary water source	Mains water
Showers - Efficiency	Scope out
Clothes Washer - Primary water source	
Clothes Washer - Efficiency	Scope out
Urinal - Primary water source	
Urinal - Efficiency	No urinals
Toilets connected to mains water	0
Toilets connected to rainwater	2
Toilets connected to recycled water	0
Toilets efficiency	4 star WELS rating
Garden water use	Garden water demands are not in use

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Appendix B: Preliminary FirstRate5 Certificates

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 101, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan 2523/
Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned*	125.2
Unconditioned*	5.3
Total	130.5
Garage	-

Exposure type suburban

NatHERS climate zone 62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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	28.7	13.7
Load limits	91	28

Features determining load limits

Floor type (lowest conditioned area)	N/A
NCC climate zone 1 or 2	N
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. If 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.

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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?	☐	☐	☐	☐	☐

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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]
Kitchen/Living	kitchen	41.6
Bed 3	bedroom	13.4
Bath	dayTime	6.2
Bed 2	bedroom	13.5
Ensuite	nightTime	5.9
Bed 1	bedroom	12
WIR	nightTime	8.7
Pantry	dayTime	5.5
Study	dayTime	6.8
Entry/Corridor 1	dayTime	10.4
Corridor 2	dayTime	1.1
Laundry	unconditioned	5.3

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-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58
CAP-061-04 A	Capral 50 Series Awning in 400 Series DG 6-12Ar-6	4.88	0.45	0.43	0.47
CAP-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	CAP-057-09 A	W3-SD	2600	4000	sliding	66.0	E	No
Bed 3	CAP-061-04 A	W4-AW	950	1000	awning	90.0	N	No
Bed 3	CAP-055-35 A	W1-FG	1800	1000	fixed	0.0	N	No
Bed 2	CAP-057-09 A	W3-SD	2600	2450	sliding	45.0	E	No
Bed 1	CAP-057-09 A	W3-SD	2600	2450	sliding	45.0	E	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 [m²]	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 length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

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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	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	GIW24020 - Double Plasterboard Core Internal Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No
3	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No

4	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m ³) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m ³) (R1.3)	No
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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	3000	4397	E	0	Yes
Kitchen/Living	2	3000	950	N	0	No
Bed 3	1	3000	3586	N	0	Yes
Bed 3	2	3000	3920	W	0	No
Bath	3	3000	3107	W	0	No
Bath	4	3000	2010	S	0	No
Bed 2	1	3000	3937	E	0	Yes
Bed 2	1	3000	3613	N	0	Yes
Ensuite	4	3000	3044	W	0	No
Ensuite	4	3000	1955	S	0	No
Bed 1	4	3000	3921	S	0	No
Bed 1	1	3000	3052	E	0	Yes
WIR	4	3000	3820	N	0	No
Pantry	4	3000	810	S	0	No
Study	4	3000	2201	N	0	No
Entry/Corridor 1	3	3000	1186	W	0	No
Entry/Corridor 1	2	3000	6603	N	0	No
Entry/Corridor 1	3	3000	2207	N	0	No
Laundry	4	3000	1709	S	0	No

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Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	115.3	
2	GIW24020 - Double Plasterboard Insulated Internal Wall	16.8	Glass fibre batt (k = 0.044 density = 12 kg/m ³) (R1.3)
3	GIW24020 - Double Plasterboard Internal Wall (64mm Air Gap)	9.7	
4	GIW24020 - Double Plasterboard Internal Wall (92mm Air Gap)	9.3	Glass fibre batt (k = 0.044 density = 12 kg/m ³) (R1.9)

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
----------	--------------	------------------------	-----------------------	----------------------------	----------

Kitchen/Living	FR5 - 200mm concrete slab	28.2	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 200mm concrete slab	13.4	Enclosed	R0.0	Timber
Bed 3	FR5 - 200mm concrete slab	13.4	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	6.2	Enclosed	R0.0	Tiles
Bed 2	FR5 - 200mm concrete slab	12.4	Enclosed	R0.0	Carpet
Bed 2	FR5 - 200mm concrete slab	1.1	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	5.9	Enclosed	R0.0	Tiles
Bed 1	FR5 - 200mm concrete slab	12	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	8.7	Enclosed	R0.0	Carpet
Pantry	FR5 - 200mm concrete slab	5.5	Enclosed	R0.0	Timber
Study	FR5 - 200mm concrete slab	6.8	Enclosed	R0.0	Timber
Entry/Corridor 1	FR5 - 200mm concrete slab	10.4	Enclosed	R0.0	Timber
Corridor 2	FR5 - 200mm concrete slab	1.1	Enclosed	R0.0	Timber
Laundry	FR5 - 200mm concrete slab	5.3	Enclosed	R0.0	Tiles

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Kitchen/Living	Plasterboard	R1.8	No
Bed 2	Plasterboard	R1.8	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	250	250	Sealed
Kitchen/Living	14	Downlights	80	80	Sealed
Bed 3	5	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Bath	2	Downlights	80	80	Sealed
Bed 2	5	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Ensuite	2	Downlights	80	80	Sealed
Bed 1	5	Downlights	80	80	Sealed
WIR	2	Downlights	80	80	Sealed
Pantry	2	Downlights	80	80	Sealed
Study	2	Downlights	80	80	Sealed
Entry/Corridor 1	4	Downlights	80	80	Sealed
Corridor 2	1	Downlights	80	80	Sealed
Laundry	1	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	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 : 200mm: 200mm 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
Internal 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.

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 206, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan DD/2523/Rev7/12.10.25

Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned* 82

Unconditioned* 4.2

Total 86.2

Garage -

Exposure type

suburban

NatHERS climate zone

62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giw.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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	50.3	10.5
Load limits	91	28

Features determining load limits

Floor type (lowest conditioned area)	N/A
NCC climate zone 1 or 2	N
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. If 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.

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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?	☐	☐	☐	☐	☐

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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]
Kitchen/Living	kitchen	41.2
Bed 2	bedroom	11.9
WIR	dayTime	8.6
Bed 1	bedroom	11.1
Entry	dayTime	2.5
Ensuite	nightTime	6.7
Bath	unconditioned	4.2

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-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	5.59	0.59	0.52	0.58
CAP-061-04 A	Capral 50 Series Awning in 400 Series DG 6-12Ar-6	4.88	0.45	0.43	0.47
CAP-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	CAP-057-09 A	D07	2685	3814	sliding	60.0	W	No
Bed 2	CAP-061-04 A	W14-FG	1950	1500	awning	90.0	W	No
Bed 2	CAP-055-35 A	W14-FG	700	1500	fixed	0.0	W	No
Bed 1	CAP-055-35 A	W13-FG	1950	1580	fixed	0.0	W	No
Bed 1	CAP-057-09 A	D06	2545	2346	sliding	45.0	N	No

Roof window* type and performance value

Default* roof windows

Substitution tolerance ranges	
-------------------------------	--

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

Custom* roof windows

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

Roof window* schedule

Location	Window ID	Window no.	Opening %	Area [m²]	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 [m²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Bed 1	1950	450	90.0	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GIW24020 - Hydraulic Riser Internal Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
2	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
3	GIW24020 - Column Internal Wall	0.5	Medium		No
4	GIW24020 - External Cementitious Sheeting (CD02) Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
5	GIW24020 - 2X Double Plasterboard Internal Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No

6	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
7	GIW24020 - External Brick Wall (W50) + Int Column Wall (W10)	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R0.7)	No
8	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
9	GIW24020 - External Brick Wall (W50) + Int Plasterboard Wall (W09)	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R0.7)	No
10	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	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	3000	3916	W	3263	No
Kitchen/Living	2	3000	7741	N	0	No
Kitchen/Living	3	3000	0000		0	No
Kitchen/Living	4	3000	3916	W	3263	Yes
Bed 2	4	3000	1755	W	3289	Yes
WIR	5	3000	3508	S	0	No
WIR	6	3000	1327	S	0	No
Bed 1	7	3000	278	W	0	No
Bed 1	8	3000	1089	W	0	No
Bed 1	8	3000	1597	W	-26	Yes
Bed 1	7	3000	598	S	0	Yes
Bed 1	9	3000	2503	S	0	Yes
Bed 1	5	3000	653	S	0	No
Bed 1	8	3000	2816	N	13183	Yes
Bed 1	8	3000	129	N	13183	Yes
Bed 1	7	3000	231	N	12952	Yes
Entry	1	3000	397	S	0	No
Entry	10	3000	1947	E	0	No
Entry	1	3000	428	N	0	No

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Ensuite	1	3000	374	N	0	No
Ensuite	6	3000	3545	S	0	No
Ensuite	10	3000	1884	E	0	No
Bath	1	3000	899	E	0	No

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	GIW24020 - Double Plasterboard Insulated Internal Wall	57.9	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)
2	GIW24020 - Internal Column Plasterboard Wall	3.2	
3	GIW24020 - Double Plasterboard Internal Wall	0.5	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)
4	GIW24020 - Double Plasterboard Internal Wall (64mm Air Gap)	11.9	
5	GIW24020 - Double Plasterboard Internal Wall (92mm Air Gap)	11.1	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	FR5 - 200mm concrete slab	10.2	Enclosed	R0.0	Timber
Bed 2	FR5 - 200mm concrete slab	11.9	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	8.6	Enclosed	R0.0	Carpet
Bed 1	FR5 - 200mm concrete slab	11.1	Enclosed	R0.0	Carpet
Entry	FR5 - 200mm concrete slab	2.5	Enclosed	R0.0	Timber
Ensuite	FR5 - 200mm concrete slab	6.7	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	4.2	Enclosed	R0.0	Tiles

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
No Data Available			

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	250	250	Sealed
Kitchen/Living	14	Downlights	80	80	Sealed
Bed 2	2	Downlights	80	80	Sealed
WIR	3	Downlights	80	80	Sealed
Bed 1	4	Downlights	80	80	Sealed
Entry	1	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed

NatHERS Certificate

7.9 Star Rating as of 27 Feb 2026

Ensuite	3	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Bath	2	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 : 200mm: 200mm 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
Internal 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.	

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Thermal performance
star rating

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 301, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

**Floor/all Floors
Type** New Home

Plans

Main plan DD/2523/Rev7/12.10.25

Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned*	121.7
Unconditioned*	6.1
Total	127.8
Garage	-

Exposure type open

NatHERS climate zone 62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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 [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	59.3	10
Load limits	91	28

Features determining load limits

Floor type (lowest conditioned area)	N/A
NCC climate zone 1 or 2	N
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. If 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.

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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?	☐	☐	☐	☐	☐

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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	6.6
Kitchen/Living	kitchen	44
Bed 3	bedroom	12.2
Bath	unconditioned	6.1
Bed 1	bedroom	18.9
WIR	nightTime	8.2
Bed 2	bedroom	11.6
Entry	dayTime	4.1
Pantry	dayTime	9.6
Corridor	dayTime	4.1
Bed 1 Entry	dayTime	2.4

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-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58
CAP-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64
CAP-061-04 A	Capral 50 Series Awning in 400 Series DG 6-12Ar-6	4.88	0.45	0.43	0.47

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	CAP-057-09 A	W3-SD	2750	788	sliding	45.0	E	No
Kitchen/Living	CAP-057-09 A	W3-SD	2750	3950	sliding	60.0	E	No
Bed 3	CAP-055-35 A	W1-FG	2750	1200	fixed	0.0	E	No
Bed 1	CAP-057-09 A	W3-SD	2800	3950	sliding	60.0	S	No
Bed 1	CAP-055-35 A	W1-FG	2750	1750	fixed	0.0	E	No
WIR	CAP-055-35 A	W1-FG	2750	1000	fixed	0.0	S	No

Bed 2	CAP-055-35 A	W1-FG	1950	1600	fixed	0.0	E	No
Bed 2	CAP-061-04 A	W2-AW	1650	1330	awning	90.0	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 no.	Opening %	Area [m²]	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 [m²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Bed 3	2750	400	90.0	E
Bed 1	2750	400	90.0	E
Bed 2	1950	400	90.0	E

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No

2	GIW24020 - Double Plasterboard Core Internal Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No
3	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
4	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	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	3000	2286	W	0	No
Kitchen/Living	2	3000	4280	N	0	No
Kitchen/Living	1	3000	3690	S	0	No
Kitchen/Living	3	3000	4485	E	2172	Yes
Bed 3	3	3000	2317	S	0	Yes
Bed 3	3	3000	4039	E	0	Yes
Bed 3	3	3000	3141	N	0	Yes
Bath	2	3000	2067	W	0	No
Bath	3	3000	2233	S	0	Yes
Bed 1	3	3000	5141	S	0	Yes
Bed 1	3	3000	3672	E	0	Yes
WIR	1	3000	3685	W	0	No
WIR	3	3000	2234	S	0	Yes
Bed 2	3	3000	3064	E	0	Yes
Bed 2	3	3000	2462	N	0	Yes
Entry	2	3000	3479	N	0	No
Entry	4	3000	1162	W	0	No
Entry	1	3000	328	S	0	No
Pantry	1	3000	2430	S	0	No
Pantry	1	3000	3961	W	0	No
Corridor	2	3000	1764	W	0	No

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	123.6	

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
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Ensuite	FR5 - 200mm concrete slab	6.6	Enclosed	R0.0	Tiles
Kitchen/Living	FR5 - 200mm concrete slab	44	Enclosed	R0.0	Timber
Bed 3	FR5 - 200mm concrete slab	0.7	Elevated	R1.8	Carpet
Bed 3	FR5 - 200mm concrete slab	11.5	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	6.1	Enclosed	R0.0	Tiles
Bed 1	FR5 - 200mm concrete slab	18.9	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	8.2	Enclosed	R0.0	Carpet
Bed 2	FR5 - 200mm concrete slab	11.6	Enclosed	R0.0	Carpet
Entry	FR5 - 200mm concrete slab	4.1	Enclosed	R0.0	Timber
Pantry	FR5 - 200mm concrete slab	9.6	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	4.1	Enclosed	R0.0	Timber
Bed 1 Entry	FR5 - 200mm concrete slab	2.4	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
No Data Available			

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Ensuite	1	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Kitchen/Living	1	Exhaust Fans	250	250	Sealed
Kitchen/Living	17	Downlights	80	80	Sealed
Bed 3	5	Downlights	80	80	Sealed
Bath	2	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Bed 1	7	Downlights	80	80	Sealed
WIR	3	Downlights	80	80	Sealed
Bed 2	4	Downlights	80	80	Sealed
Entry	2	Downlights	80	80	Sealed
Pantry	3	Downlights	80	80	Sealed
Corridor	1	Downlights	80	80	Sealed
Bed 1 Entry	1	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 : 200mm: 200mm 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.	

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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme[®]

NatHERS[®] Certificate

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 403, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors

Type New Home

Plans

Main plan -

Prepared by -

Construction and environment

Assessed floor area [m²]*

Conditioned*	134.9
Unconditioned*	4.2
Total	139.1
Garage	-

Exposure type open

NatHERS climate zone 62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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	57.4	15.4
Load limits	91	28

Features determining load limits

Floor type (lowest conditioned area)	N/A
NCC climate zone 1 or 2	N
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. If 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.

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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?	☐	☐	☐	☐	☐

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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]
Kitchen/Living 1	kitchen	46.4
Bedroom 2	bedroom	12.4
Bedroom 1	bedroom	11.3
Ensuite 01	nightTime	4.7
Ensuite 02	nightTime	10.2
Bath1	dayTime	5.8
Pantry	dayTime	7.3
Bedroom 3	bedroom	12.9
WIR	dayTime	11
Laundry	unconditioned	4.2
Entry	dayTime	4.4
Corridor	dayTime	5.4
Bed 1 entry	dayTime	3.1

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-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	CAP-055-35 A	W1-FG	2750	1200	fixed	0.0	W	No
Kitchen/Living 1	CAP-057-09 A	W3-SD	2800	2900	sliding	45.0	W	No
Bedroom 2	CAP-055-35 A	W1-FG	2750	850	fixed	0.0	S	No
Bedroom 1	CAP-055-35 A	W1-FG	1950	1600	fixed	0.0	S	No
Ensuite 02	CAP-055-35 A	W1-FG	1960	1110	fixed	0.0	W	No

NatHERS Certificate

7.4 Star Rating as of 27 Feb 2026

Bedroom 3	CAP-055-35 A	W1-FG	2750	1750	fixed	0.0	W	No
Bedroom 3	CAP-055-35 A	W1-FG	2750	600	fixed	0.0	W	No
Bedroom 3	CAP-057-09 A	W1-FG	2750	1750	sliding	45.0	S	No
WIR	CAP-055-35 A	W1-FG	2750	850	fixed	0.0	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 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
Kitchen/Living 1	2750	400	90.0	W
Bedroom 2	2750	400	90.0	S
Bedroom 1	1950	400	90.0	S
Ensuite 02	1960	400	90.0	W
Bedroom 3	2750	400	90.0	W
Bedroom 3	2750	400	90.0	W
Bedroom 3	2750	400	90.0	S
WIR	2750	400	90.0	W

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External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
3	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	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	1	3000	6826	W	0	Yes
Kitchen/Living 1	2	3000	5147	N	0	No
Bedroom 2	1	3000	2092	S	0	No
Bedroom 1	1	3000	3024	S	0	No
Bedroom 1	1	3000	2638	E	16045	Yes
Bedroom 1	2	3000	1305	E	0	No
Ensuite 01	2	3000	2493	E	0	No
Ensuite 02	1	3000	2089	W	0	Yes
Bath1	2	3000	1934	E	0	No
Pantry	3	3000	2398	E	0	No
Pantry	3	3000	1774	N	0	No
Pantry	2	3000	2334	N	0	No
Bedroom 3	1	3000	4119	W	0	Yes
Bedroom 3	1	3000	3141	S	0	No
WIR	1	3000	2199	W	0	Yes
Laundry	3	3000	2062	E	0	No
Entry	2	3000	635	E	0	No
Entry	3	3000	1456	E	0	No

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	175.8	

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living 1	FR5 - 200mm concrete slab	3.9	Enclosed	R0.0	Timber
Kitchen/Living 1	FR5 - 200mm concrete slab	42.5	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 200mm concrete slab	12.4	Enclosed	R0.0	Carpet
Bedroom 1	FR5 - 200mm concrete slab	11.3	Enclosed	R0.0	Carpet
Ensuite 01	FR5 - 200mm concrete slab	4.7	Enclosed	R0.0	Tiles
Ensuite 02	FR5 - 200mm concrete slab	10.2	Enclosed	R0.0	Tiles
Bath1	FR5 - 200mm concrete slab	5.8	Enclosed	R0.0	Tiles
Pantry	FR5 - 200mm concrete slab	7.3	Enclosed	R0.0	Timber
Bedroom 3	FR5 - 200mm concrete slab	9	Enclosed	R0.0	Carpet
Bedroom 3	FR5 - 200mm concrete slab	3.9	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	3.8	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	7.3	Enclosed	R0.0	Carpet
Laundry	FR5 - 200mm concrete slab	4.2	Enclosed	R0.0	Tiles
Entry	FR5 - 200mm concrete slab	4.4	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	5.4	Enclosed	R0.0	Timber
Bed 1 entry	FR5 - 200mm concrete slab	3.1	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction material type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Kitchen/Living 1	Plasterboard	R4.6	No
Bedroom 3	Plasterboard	R1.8	No
WIR	Plasterboard	R1.8	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Kitchen/Living 1	18	Downlights	80	80	Sealed
Kitchen/Living 1	1	Exhaust Fans	250	250	Sealed
Bedroom 2	5	Downlights	80	80	Sealed
Bedroom 1	5	Downlights	80	80	Sealed
Ensuite 01	2	Downlights	80	80	Sealed
Ensuite 01	1	Exhaust Fans	250	250	Sealed
Ensuite 02	3	Downlights	80	80	Sealed
Ensuite 02	1	Exhaust Fans	250	250	Sealed
Bath1	2	Downlights	80	80	Sealed
Bath1	1	Exhaust Fans	250	250	Sealed
Pantry	3	Downlights	80	80	Sealed
Bedroom 3	5	Downlights	80	80	Sealed

NatHERS Certificate

7.4 Star Rating as of 27 Feb 2026

WIR	4	Downlights	80	80	Sealed
Laundry	1	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	Sealed
Entry	2	Downlights	80	80	Sealed
Corridor	6	Downlights	80	80	Sealed
Bed 1 entry	1	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 : 200mm: 200mm 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 [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.	

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 405, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan DD/2523/Rev7/12.10.25

Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned* 85.6

Unconditioned* 6.9

Total 92.5

Garage -

Exposure type

open

NatHERS climate zone

62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 0390445111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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	76.1	20.8
Load limits	91	28

Features determining load limits

Floor type	N/A
(lowest conditioned area)	
NCC climate zone 1 or 2	N
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. If 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.

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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?	☐	☐	☐	☐	☐

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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]
Bed 1	bedroom	11.4
Ensuite	nightTime	7.2
Bed 2	bedroom	10.5
Kitchen/Living	kitchen	38.4
Entry	dayTime	4.6
Bath	unconditioned	6.9
WIR	dayTime	4.2
Study	dayTime	5.8
Bed 1 Entry	dayTime	3.6

Window and glazed door type and performance

Default* windows

Window ID	Window description	Substitution tolerance ranges	
		SHGC lower limit	SHGC upper limit
No Data Available			

Custom* windows

Window ID	Window description	Substitution tolerance ranges	
		SHGC lower limit	SHGC upper limit
CAP-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	0.58	0.64
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	0.52	0.58
CAP-061-04 A	Capral 50 Series Awning in 400 Series DG 6-12Ar-6	0.43	0.47

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	CAP-055-35 A	W14	3000	2711	fixed	0.0	W	No
Bed 1	CAP-057-09 A	D03	2685	1956	sliding	45.0	S	No
Bed 2	CAP-055-35 A	W15-FG	2700	1880	fixed	0.0	E	No
Bed 2	CAP-061-04 A	W15-AW	1850	1120	awning	90.0	E	No
Bed 2	CAP-055-35 A	W15-FG	850	1120	fixed	0.0	E	No
Kitchen/Living	CAP-057-09 A	D02	2685	3316	sliding	60.0	W	No
Bath	CAP-061-04 A	W16-AW	1900	950	awning	90.0	N	No
Bath	CAP-055-35 A	W16-FG	850	950	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 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 length [mm]	Area [m ²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

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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	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	GIW24020 - External Cementitious Sheeting (CD02) Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
3	GIW24020 - External Concrete Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No

4	GIW24020 - External Concrete Wall (W51) + Int. Wall (W04)	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
5	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
6	GIW24020 - Column Internal Wall	0.5	Medium		No
7	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No
8	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Bed 1	1	3000	2393	W	0	Yes
Bed 1	1	3000	622	W	0	No
Bed 1	1	3000	18216	S	13216	Yes
Bed 1	2	3000	2558	S	13322	Yes
Bed 1	2	3000	13404	S	13404	Yes
Bed 1	3	3000	3788	N	0	Yes
Ensuite	4	3000	4140	N	0	Yes
Bed 2	3	3000	2990	E	0	Yes
Bed 2	3	3000	3654	N	0	Yes
Kitchen/Living	2	3000	3944	W	3253	Yes
Kitchen/Living	5	3000	213	S	0	No
Kitchen/Living	6	3000	817	S	0	No
Kitchen/Living	5	3000	7815	S	0	No
Entry	5	3000	505	W	0	No
Entry	7	3000	1675	S	0	No
Entry	8	3000	687	S	0	No
Entry	5	3000	499	S	0	No
Bath	8	3000	1713	S	0	No
Bath	8	3000	3501	E	0	No
Bath	3	3000	2470	N	0	Yes
WIR	3	3000	2301	N	0	Yes
Study	3	3000	903	E	0	Yes

Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	GIW24020 - Double Plasterboard Insulated Internal Wall	62.3	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)
2	GIW24020 - Hydraulic Riser Internal Wall	5.9	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)
3	FR5 - Internal Plasterboard Stud Wall	1.9	
4	GIW24020 - Double Plasterboard Internal Wall (92mm Air Gap)	11.4	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)
5	GIW24020 - Double Plasterboard Internal Wall (64mm Air Gap)	18.7	

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	FR5 - 200mm concrete slab	2	Enclosed	R0.0	Carpet
Bed 1	FR5 - 200mm concrete slab	9.4	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	7.2	Enclosed	R0.0	Tiles
Bed 2	FR5 - 200mm concrete slab	10.5	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	98.4	Enclosed	R0.0	Timber
Entry	FR5 - 200mm concrete slab	4.6	Enclosed	R0.0	Timber
Bath	FR5 - 200mm concrete slab	6.9	Enclosed	R0.0	Tiles
WIR	FR5 - 200mm concrete slab	4.2	Enclosed	R0.0	Carpet
Study	FR5 - 200mm concrete slab	5.8	Enclosed	R0.0	Timber
Bed 1 Entry	FR5 - 200mm concrete slab	3.6	Enclosed	R0.0	Carpet

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Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Bed 1	Plasterboard	R1.8	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Bed 1	4	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Ensuite	3	Downlights	80	80	Sealed
Bed 2	2	Downlights	80	80	Sealed
Kitchen/Living	14	Downlights	80	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	250	Sealed
Entry	1	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed

NatHERS Certificate

6.6 Star Rating as of 27 Feb 2026

Bath	2	Downlights	80	80	Sealed
WIR	1	Downlights	80	80	Sealed
Study	1	Downlights	80	80	Sealed
Bed 1 Entry	1	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 : 200mm: 200mm 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
Internal wall	90 x 40	600	0.75	0

Appliance schedule

(not applicable if a Whole of Home performance assessment is 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.	

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Thermal performance
star rating

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 504, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

**Floor/all Floors
Type** New Home

Plans

Main plan -

Prepared by -

Construction and environment

Assessed floor area [m²]*

Conditioned*	185.7
Unconditioned*	3.5
Total	189.2
Garage	-

Exposure type open

NatHERS climate zone 62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	38.7	21
Load limits	91	28

Features determining load limits

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

NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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.

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. If 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.

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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?	☐	☐	☐	☐	☐

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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]
Living 2	dayTime	14.9
Study	dayTime	6.3
Pantry	dayTime	7.8
Living/Kitchen	kitchen	71.2
Powder Room	unconditioned	3.5
WIR / Bed 3 Entry	dayTime	4.3
Ensuite 3	nightTime	4.2
Bed 3	bedroom	10
Bed 2	bedroom	10
WIR / Bed 2 Entry	dayTime	4.2
Ensuite 2	nightTime	4.2
Entry	dayTime	3.9
Laundry	dayTime	3.6
WIR	dayTime	5
Corridor 2	dayTime	6.1
Ensuite 1	nightTime	9.2
Bed 1 Entry	dayTime	5.3
Bed 1	bedroom	15.6

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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
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-023-19 B	Series EC35TB Awning Window DG 6mmEVanClr-10Ar-6mmClr	2.5	0.41	0.39	0.43

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Living 2	THC-010-21 A	W3-SD	2750	2750	sliding	45.0	W	No
Study	THC-033-07 B	W1-FW	1800	950	fixed	0.0	E	No
Study	THC-023-19 B	W4-AW	950	950	awning	90.0	E	No
Pantry	THC-033-07 B	W1-FW	850	950	fixed	0.0	N	No
Pantry	THC-023-19 B	W4-AW	1900	950	awning	90.0	N	No
Living/Kitchen	THC-010-21 A	W3-SD	2750	2400	sliding	45.0	N	No
Living/Kitchen	THC-010-21 A	W3-SD	2800	3950	sliding	66.0	W	No
Living/Kitchen	THC-033-07 B	W1-FW	2750	1200	fixed	0.0	W	No
Bed 3	THC-010-21 A	W3-SD	2750	2000	sliding	45.0	W	No
Bed 2	THC-033-07 B	W1-FW	2750	950	fixed	0.0	W	No
Bed 2	THC-033-07 B	W1-FW	2750	850	fixed	0.0	W	No
Bed 1	THC-033-07 B	W1-FW	2750	1750	fixed	0.0	W	No

Roof window* type and performance value

Default* roof windows

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

Substitution tolerance ranges

SHGC lower limit	SHGC upper limit
------------------	------------------

Custom* roof windows

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

Substitution tolerance ranges

SHGC lower limit	SHGC upper limit
------------------	------------------

Roof window* schedule

Location	Window ID	Window no.	Opening %	Area [m²]	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 [m²]	Orientation	Outdoor shade	Diffuser
No Data Available							

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External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Living/Kitchen	2750	400	90.0	W
Bed 2	2750	400	90.0	W
Bed 2	2750	400	90.0	W
Bed 1	2750	400	90.0	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
3	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No

External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Living 2	1	3000	4525	N	0	Yes
Living 2	1	3000	3441	W	0	Yes
Study	1	3000	4022	E	0	Yes
Study	1	3000	1563	N	0	Yes
Pantry	2	3000	2190	S	0	No
Pantry	2	3000	3569	E	0	No
Pantry	1	3000	2190	N	0	Yes
Living/Kitchen	2	3000	3569	E	0	No
Living/Kitchen	1	3000	212	N	0	Yes
Living/Kitchen	1	3000	425	W	0	Yes
Living/Kitchen	1	3000	2963	N	0	Yes
Living/Kitchen	1	3000	1047	W	0	Yes
Living/Kitchen	1	3000	4382	W	0	Yes
Living/Kitchen	1	3000	1909	W	0	Yes
Powder Room	3	3000	1639	E	0	No
Bed 3	1	3000	638	W	0	Yes
Bed 3	1	3000	2668	W	0	Yes

Bed 2	1	3000	1687	W	0	Yes
Bed 2	1	3000	1620	W	0	Yes
Entry	3	3000	1826	E	0	No
Laundry	3	3000	1690	E	0	No
WIR	3	3000	715	E	0	No
WIR	3	3000	737	S	0	No
WIR	3	3000	1875	E	0	No
Ensuite 1	3	3000	743	N	0	No
Ensuite 1	2	3000	4778	S	0	No
Ensuite 1	3	3000	1928	E	0	No
Bed 1	2	3000	108	E	0	No
Bed 1	1	3000	3466	W	0	Yes
Bed 1	2	3000	4496	S	0	No

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	222.4	

Floor type

Location	Construction	Area [m²]	Added insulation [R-value]	Covering
Living 2	FR5 - 200mm concrete slab	14.9	R0.0	Timber
Study	FR5 - 200mm concrete slab	0.3	R0.0	Timber
Study	FR5 - 200mm concrete slab	6	R0.0	Timber
Pantry	FR5 - 200mm concrete slab	7.8	R0.0	Timber
Living/Kitchen	FR5 - 200mm concrete slab	1.7	R0.0	Timber
Living/Kitchen	FR5 - 200mm concrete slab	69.5	R0.0	Timber
Powder Room	FR5 - 200mm concrete slab	3.5	R0.0	Tiles
WIR / Bed 3 Entry	FR5 - 200mm concrete slab	4.3	R0.0	Carpet
Ensuite 3	FR5 - 200mm concrete slab	4.2	R0.0	Tiles
Bed 3	FR5 - 200mm concrete slab	10	R0.0	Carpet
Bed 2	FR5 - 200mm concrete slab	10	R0.0	Carpet
WIR / Bed 2 Entry	FR5 - 200mm concrete slab	4.2	R0.0	Carpet
Ensuite 2	FR5 - 200mm concrete slab	4.2	R0.0	Tiles
Entry	FR5 - 200mm concrete slab	3.9	R0.0	Timber
Laundry	FR5 - 200mm concrete slab	3.6	R0.0	Tiles
WIR	FR5 - 200mm concrete slab	5	R0.0	Carpet
Corridor 2	FR5 - 200mm concrete slab	6.1	R0.0	Timber
Ensuite 1	FR5 - 200mm concrete slab	9.2	R0.0	Tiles
Bed 1 Entry	FR5 - 200mm concrete slab	5.3	R0.0	Carpet

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Bed 1	FR5 - 200mm concrete slab	7.8	Enclosed	R0.0	Carpet
Bed 1	FR5 - 200mm concrete slab	7.8	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Living 2	Plasterboard	R1.8	No
Study	Plasterboard	R1.8	No
Living/Kitchen	Plasterboard	R1.8	No
Bed 1	Plasterboard	R1.8	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Living 2	5	Downlights	80	80	Sealed
Study	2	Downlights	80	80	Sealed
Pantry	3	Downlights	80	80	Sealed
Living/Kitchen	29	Downlights	80	80	Sealed
Living/Kitchen	1	Exhaust Fans	250	250	Sealed
Powder Room	1	Downlights	80	80	Sealed
Powder Room	1	Exhaust Fans	250	250	Sealed
WIR / Bed 3 Entry	1	Downlights	80	80	Sealed
Ensuite 3	2	Downlights	80	80	Sealed
Ensuite 3	1	Exhaust Fans	250	250	Sealed
Bed 3	4	Downlights	80	80	Sealed
Bed 2	4	Downlights	80	80	Sealed
WIR / Bed 2 Entry	2	Downlights	80	80	Sealed
Ensuite 2	2	Downlights	80	80	Sealed
Ensuite 2	1	Exhaust Fans	250	250	Sealed
Entry	1	Downlights	80	80	Sealed
Laundry	1	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	Sealed
WIR	1	Downlights	80	80	Sealed
Corridor 2	2	Downlights	80	80	Sealed
Ensuite 1	3	Downlights	80	80	Sealed
Ensuite 1	1	Exhaust Fans	250	250	Sealed
Bed 1 Entry	2	Downlights	80	80	Sealed
Bed 1	6	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 : 200mm: 200mm 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.

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Thermal performance
star rating

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 606, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan 2523/
Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned*	98.4
Unconditioned*	3
Total	101.4
Garage	-

Exposure type open

NatHERS climate zone 62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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 [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	67.4	7.7
Load limits	91	28

Features determining load limits

Floor type	N/A
(lowest conditioned area)	
NCC climate zone 1 or 2	N
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. If 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.

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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?	☐	☐	☐	☐	☐

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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]
Bath	dayTime	5.1
Laundry	unconditioned	3
Entry	dayTime	2.8
Bed 2	bedroom	11.9
Bed 3	bedroom	10.5
Corridor 2	dayTime	1.1
Bed 1	bedroom	13.9
WIR	nightTime	4.2
Ensuite	nightTime	5.8
Bed 1 Entry	dayTime	0.9
Corridor 1	dayTime	1.2
Living/Kitchen	kitchen	41.1

Window and glazed door type and performance

Default* windows

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				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value	SHGC	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-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64
CAP-061-04 A	Capral 50 Series Awning in 400 Series DG 6-12Ar-6	4.88	0.45	0.43	0.47
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 2	CAP-055-35 A	W1-FG	750	960	fixed	0.0	S	No
Bed 2	CAP-061-04 A	W4-AW	2000	960	awning	90.0	S	No
Bed 3	CAP-055-35 A	W1-FG	2750	1750	fixed	0.0	E	No
Bed 3	CAP-057-09 A	W3-SD	2750	2000	sliding	45.0	N	No
Bed 1	CAP-055-35 A	W1-FG	2750	1200	fixed	0.0	E	No

Living/Kitchen	CAP-057-09 A	W3-SD	2750	3950	sliding	60.0	E	No
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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
Bed 3	2750	400	90.0	E
Bed 1	2750	400	90.0	E

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
2	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No

3	GIW24020 - Double Plasterboard Core Internal Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No
4	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
5	FR5 - Internal Plasterboard Stud Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Bath	1	3000	607	E	0	No
Bath	1	3000	1880	N	0	No
Bath	1	3000	2248	W	0	No
Bath	2	3000	452	W	0	No
Laundry	2	3000	107	N	0	No
Laundry	2	3000	1508	W	0	No
Entry	2	3000	1059	S	0	No
Entry	2	3000	2688	S	0	No
Bed 2	3	3000	2806	S	0	No
Bed 2	2	3000	1420	S	0	No
Bed 2	4	3000	2581	S	0	Yes
Bed 3	4	3000	3631	S	0	Yes
Bed 3	4	3000	3074	E	0	No
Bed 3	4	3000	2994	N	12212	Yes
Bed 1	4	3000	2947	S	7614	Yes
Bed 1	4	3000	3044	E	0	No
Bed 1	1	3000	4556	N	0	No
WIR	1	3000	2213	N	0	No
WIR	1	3000	107	W	0	No
Ensuite	1	3000	1980	N	0	No
Ensuite	1	3000	2353	W	0	No
Living/Kitchen	2	3000	1023	S	0	No
Living/Kitchen	2	3000	504	W	0	No
Living/Kitchen	3	3000	2421	S	0	No
Living/Kitchen	5	3000	206	S	0	Yes
Living/Kitchen	4	3000	4262	E	2843	Yes
Living/Kitchen	1	3000	2920	N	0	No

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Internal wall type

Wall ID	Wall type	Area [m ²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	101.3	

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bath	FR5 - 200mm concrete slab	5.1	Enclosed	R0.0	Tiles
Laundry	FR5 - 200mm concrete slab	3	Enclosed	R0.0	Tiles
Entry	FR5 - 200mm concrete slab	2.8	Enclosed	R0.0	Timber
Bed 2	FR5 - 200mm concrete slab	11.9	Enclosed	R0.0	Carpet
Bed 3	FR5 - 200mm concrete slab	10.5	Enclosed	R0.0	Carpet
Corridor 2	FR5 - 200mm concrete slab	1.1	Enclosed	R0.0	Timber
Bed 1	FR5 - 200mm concrete slab	13.9	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	4.2	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	5.8	Enclosed	R0.0	Tiles
Bed 1 Entry	FR5 - 200mm concrete slab	0.9	Enclosed	R0.0	Carpet
Corridor 1	FR5 - 200mm concrete slab	11.2	Enclosed	R0.0	Timber
Living/Kitchen	FR5 - 200mm concrete slab	41.1	Enclosed	R0.0	Timber

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
No Data Available			

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Bath	2	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Laundry	1	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	Sealed
Entry	1	Downlights	80	80	Sealed
Bed 2	5	Downlights	80	80	Sealed
Bed 3	4	Downlights	80	80	Sealed
Corridor 2	1	Downlights	80	80	Sealed
Bed 1	5	Downlights	80	80	Sealed
WIR	1	Downlights	80	80	Sealed
Ensuite	2	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed

NatHERS Certificate

7.4 Star Rating as of 27 Feb 2026

Corridor 1	1	Downlights	80	80	Sealed
Living/Kitchen	16	Downlights	80	80	Sealed
Living/Kitchen	1	Exhaust Fans	250	250	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 : 200mm: 200mm 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 has been conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting that 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.	

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Thermal performance
star rating

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 702, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan 2523/
Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned*	116.9
Unconditioned*	3.3
Total	120.2
Garage	-

Exposure type open

NatHERS climate zone 62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	47.7	16
Load limits	91	28

Features determining load limits

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

NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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.

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. If 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.

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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?	☐	☐	☐	☐	☐

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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 [m ²]
Bed 1	bedroom	12.4
WIR	nightTime	6.5
Bed 1 Entry	dayTime	3.2
Ensuite	nightTime	5.7
Bed 2	bedroom	11.4
Laundry	unconditioned	3.3
Entry	dayTime	1.4
Bed 3 Entry	dayTime	4.1
Bath	dayTime	5.9
Pantry	dayTime	3.7
Corridor	dayTime	6.6
Bed 3	bedroom	10.6
Living/Kitchen	kitchen	45.5

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
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-023-19 B	Series EC35TB Awning Window DG 6mmEVanClr-10Ar-6mmClr	2.5	0.41	0.39	0.43
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	THC-033-07 B	W1-FG	2000	1600	fixed	0.0	W	No
Bed 2	THC-033-07 B	W1-FG	2750	900	fixed	0.0	W	No
Bed 2	THC-033-07 B	W1-FG	750	1050	fixed	0.0	W	No
Bed 2	THC-023-19 B	W4-AW	2000	1050	awning	90.0	W	No

NatHERS Certificate

7.8 Star Rating as of 27 Feb 2026

Bed 3	THC-033-07 B	W1-FG	2750	1750	fixed	0.0	W	No
Living/Kitchen	THC-010-21 A	W3-SD	2750	3950	sliding	60.0	W	No
Living/Kitchen	THC-033-07 B	W1-FG	2750	2000	fixed	0.0	S	No
Living/Kitchen	THC-033-07 B	W1-FG	2750	2000	fixed	0.0	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]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Bed 1	2000	400	90.0	W
Bed 3	2750	400	90.0	W
Living/Kitchen	2750	400	90.0	S
Living/Kitchen	2750	400	90.0	S

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
---------	-----------	-------------------	---------------------	---------------------------	-----------------------

1	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
3	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Bed 1	1	3000	3100	W	0	No
Bed 1	1	3000	2221	S	0	Yes
Bed 1	2	3000	1377	N	0	No
Bed 1	1	3000	2616	N	17887	Yes
WIR	2	3000	128	E	0	No
WIR	2	3000	3257	N	0	No
Ensuite	3	3000	2802	E	0	No
Ensuite	2	3000	1960	N	0	No
Bed 2	1	3000	2412	N	0	Yes
Laundry	3	3000	1694	E	0	No
Entry	3	3000	1272	E	0	No
Bath	2	3000	2042	E	0	No
Bath	3	3000	1803	N	0	No
Pantry	2	3000	1501	E	0	No
Bed 3	1	3000	2096	N	0	Yes
Bed 3	1	3000	3758	W	0	No
Bed 3	1	3000	2993	S	4691	Yes
Living/Kitchen	2	3000	3977	E	0	No
Living/Kitchen	1	3000	4771	W	3023	Yes
Living/Kitchen	1	3000	8105	S	0	Yes

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	142.1	

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
----------	--------------	-----------	-----------------------	----------------------------	----------

Bed 1	FR5 - 200mm concrete slab	12.4	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	6.5	Enclosed	R0.0	Carpet
Bed 1 Entry	FR5 - 200mm concrete slab	3.2	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	5.7	Enclosed	R0.0	Tiles
Bed 2	FR5 - 200mm concrete slab	11.4	Enclosed	R0.0	Carpet
Laundry	FR5 - 200mm concrete slab	3.3	Enclosed	R0.0	Tiles
Entry	FR5 - 200mm concrete slab	1.4	Enclosed	R0.0	Timber
Bed 3 Entry	FR5 - 200mm concrete slab	4.1	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	5.9	Enclosed	R0.0	Tiles
Pantry	FR5 - 200mm concrete slab	3.7	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	6.6	Enclosed	R0.0	Timber
Bed 3	FR5 - 200mm concrete slab	10.6	Enclosed	R0.0	Carpet
Living/Kitchen	FR5 - 200mm concrete slab	43.7	Enclosed	R0.0	Timber
Living/Kitchen	FR5 - 200mm concrete slab	1.8	Elevated	R1.8	Timber

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
No Data Available			

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Bed 1	5	Downlights	80	80	Sealed
WIR	2	Downlights	80	80	Sealed
Bed 1 Entry	1	Downlights	80	80	Sealed
Ensuite	2	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Bed 2	5	Downlights	80	80	Sealed
Laundry	1	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	Sealed
Entry	1	Downlights	80	80	Sealed
Bed 3 Entry	1	Downlights	80	80	Sealed
Bath	2	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Pantry	1	Downlights	80	80	Sealed
Corridor	3	Downlights	80	80	Sealed
Bed 3	4	Downlights	80	80	Sealed
Living/Kitchen	18	Downlights	80	80	Sealed
Living/Kitchen	1	Exhaust Fans	250	250	Sealed

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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 : 200mm: 200mm 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.		

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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.

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 903, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan 2523/
Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned*	136.9
Unconditioned*	3.5
Total	140.4
Garage	-

Exposure type exposed

NatHERS climate zone 62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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	34.3	19.8
Load limits	91	28

Features determining load limits

Floor type (lowest conditioned area)	N/A
NCC climate zone 1 or 2	N
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. If 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.

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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?	☐	☐	☐	☐	☐

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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?	☐	☐	☐	☐
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Insulation installation method

Has the insulation been installed according to the NCC requirements?	☐	☐	☐	☐
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Building sealing

Does the dwelling meet the NCC requirements for Building Sealing?	☐	☐	☐	☐
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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?	☐	☐	☐	☐
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Additional NCC Requirements for Services (not included in the NatHERS assessment)

Does the lighting meet the artificial lighting requirements specified in the NCC?	☐	☐	☐	☐
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Does the hot water system meet the additional requirements specified in the NCC?	☐	☐	☐	☐
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Provisional values* check

Have provisional values* been used in the assessment and, if so, are they noted in 'Additional notes' table below?	☐	☐	☐	☐
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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]
WIR	nightTime	7.4
Ensuite	nightTime	8.1
Bed 1	bedroom	13.6
Bed 1 Entry	dayTime	3
Bed 2	bedroom	13.5
Bath	dayTime	5.5
Entry	dayTime	3.3
Laundry	dayTime	3.6
Powder Room	unconditioned	3.5
Pantry	dayTime	5.1
Bed 3	bedroom	12.5
Study	dayTime	6.1
Corridor	dayTime	8.2
Living/Kitchen	kitchen	47

Window and glazed door type and performance

Default* windows

		Substitution tolerance ranges	
Window ID	Window description	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
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	THC-033-07 B	W1-FG	2750	1200	fixed	0.0	W	No
Bed 2	THC-033-07 B	W1-FG	2750	1750	fixed	0.0	W	No
Bed 3	THC-033-07 B	W1-FG	2750	850	fixed	0.0	W	No
Study	THC-033-07 B	W1-FG	2750	850	fixed	0.0	W	No

NatHERS Certificate

8.2 Star Rating as of 27 Feb 2026

Living/Kitchen	THC-010-21 A	W3-SD	2750	3950	sliding	60.0	N	No
Living/Kitchen	THC-033-07 B	W1-FG	2750	1200	fixed	0.0	W	No
Living/Kitchen	THC-010-21 A	W3-SD	2750	3950	sliding	60.0	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

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

Roof window* schedule

Location	Window ID	Window no.	Opening %	Area [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
Bed 1	2750	400	90.0	W
Bed 2	2750	400	90.0	W
Bed 3	2750	400	90.0	W
Study	2750	400	90.0	W
Living/Kitchen	2750	400	90.0	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
---------	-----------	-------------------	---------------------	---------------------------	-----------------------

1	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
2	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No
3	GIW24020 - External Brick Wall	0.5	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)
WIR	1	3000	4528	S	0	No
WIR	2	3000	1508	E	0	No
WIR	2	3000	104	N	0	No
Ensuite	2	3000	2908	E	0	No
Bed 1	3	3000	1936	S	0	Yes
Bed 1	1	3000	2823	S	0	No
Bed 1	3	3000	3050	N	0	No
Bed 2	3	3000	3036	W	0	Yes
Bath	2	3000	104	N	0	No
Bath	2	3000	686	E	0	No
Bath	2	3000	743	N	0	No
Bath	2	3000	1878	E	0	No
Entry	2	3000	745	S	0	No
Entry	2	3000	1246	E	0	No
Laundry	2	3000	223	E	0	No
Laundry	1	3000	1411	E	0	No
Laundry	1	3000	108	N	0	No
Powder Room	1	3000	1068	E	0	No
Pantry	1	3000	2228	E	0	No
Pantry	1	3000	120	S	0	No
Bed 3	3	3000	3130	W	0	Yes
Study	3	3000	1692	W	0	Yes
Living/Kitchen	1	3000	4933	E	0	No
Living/Kitchen	3	3000	6474	N	0	Yes
Living/Kitchen	3	3000	7791	W	0	Yes

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	179.3	

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
WIR	FR5 - 200mm concrete slab	7.4	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	8.1	Enclosed	R0.0	Tiles
Bed 1	FR5 - 200mm concrete slab	13.6	Enclosed	R0.0	Carpet
Bed 1 Entry	FR5 - 200mm concrete slab	3	Enclosed	R0.0	Carpet
Bed 2	FR5 - 200mm concrete slab	5	Elevated	R1.8	Carpet
Bed 2	FR5 - 200mm concrete slab	8.5	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	5.5	Enclosed	R0.0	Tiles
Entry	FR5 - 200mm concrete slab	3.3	Enclosed	R0.0	Timber
Laundry	FR5 - 200mm concrete slab	3.6	Enclosed	R0.0	Tiles
Powder Room	FR5 - 200mm concrete slab	3.5	Enclosed	R0.0	Tiles
Pantry	FR5 - 200mm concrete slab	5.1	Enclosed	R0.0	Timber
Bed 3	FR5 - 200mm concrete slab	12.5	Enclosed	R0.0	Carpet
Study	FR5 - 200mm concrete slab	6.9	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	8.2	Enclosed	R0.0	Timber
Living/Kitchen	FR5 - 200mm concrete slab	14.6	Enclosed	R0.0	Timber
Living/Kitchen	FR5 - 200mm concrete slab	32.5	Enclosed	R0.0	Timber

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Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Living/Kitchen	Plasterboard	R1.8	No

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
WIR	3	Downlights	80	80	Sealed
Ensuite	3	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Bed 1	5	Downlights	80	80	Sealed
Bed 1 Entry	1	Downlights	80	80	Sealed
Bed 2	5	Downlights	80	80	Sealed
Bath	2	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Entry	1	Downlights	80	80	Sealed
Laundry	1	Downlights	80	80	Sealed

NatHERS Certificate

8.2 Star Rating as of 27 Feb 2026

Laundry	1	Exhaust Fans	250	250	Sealed
Powder Room	1	Downlights	80	80	Sealed
Powder Room	1	Exhaust Fans	250	250	Sealed
Pantry	2	Downlights	80	80	Sealed
Bed 3	5	Downlights	80	80	Sealed
Study	2	Downlights	80	80	Sealed
Corridor	3	Downlights	80	80	Sealed
Living/Kitchen	18	Downlights	80	80	Sealed
Living/Kitchen	1	Exhaust Fans	250	250	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 : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

Thermal bridging schedule for steel wall 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

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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.	

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Thermal performance
star rating

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 1104, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan 2523/
Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned*	119.2
Unconditioned*	4.7
Total	123.9
Garage	-

Exposure type exposed

NatHERS climate zone 62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 0390445111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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Thermal performance [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	49	13.8
Load limits	91	28

Features determining load limits

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

NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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.

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. If 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.

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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?	☐	☐	☐	☐	☐

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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 [m ²]
Bed 1	bedroom	11.1
WIR	nightTime	4
Ensuite	nightTime	5.8
Bed 1 Entry	dayTime	4.3
Entry	dayTime	2.4
Corridor	dayTime	14.4
Laundry	unconditioned	4.7
Bath	dayTime	6.1
Bed 3	bedroom	10.9
Bed 2	bedroom	13.7
Pantry	dayTime	4.2
Living/Kitchen	kitchen	42.3

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-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	CAP-055-35 A	W1-FG	2750	1750	fixed	0.0	N	No
Bed 3	CAP-055-35 A	W1-FG	2750	1750	fixed	0.0	E	No
Bed 2	CAP-055-35 A	W1-FG	2750	1750	fixed	0.0	E	No
Living/Kitchen	CAP-057-09 A	W3-SD	2750	3300	sliding	60.0	E	No
Living/Kitchen	CAP-057-09 A	W3-SD	2750	2000	sliding	45.0	E	No
Living/Kitchen	CAP-055-35 A	W1-FG	2750	1100	fixed	0.0	N	No

Living/Kitchen	CAP-055-35 A	W1-FG	2750	1750	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 no.	Opening %	Area [m²]	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 [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Bed 1	2750	400	90.0	N
Bed 3	2750	400	90.0	E
Bed 2	2750	400	90.0	E
Living/Kitchen	2750	400	90.0	N

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No

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*Refer to glossary.

2	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
3	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No
4	GIW24020 - Double Plasterboard Core Internal Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Bed 1	1	3000	3128	N	0	No
Bed 1	1	3000	2246	W	6941	Yes
Bed 1	2	3000	1303	W	0	No
WIR	2	3000	1986	W	0	No
Ensuite	2	3000	2916	W	0	No
Entry	3	3000	1982	S	0	No
Entry	2	3000	3000	S	0	No
Corridor	3	3000	3498	S	0	No
Corridor	3	3000	3000	S	0	No
Corridor	4	3000	2435	S	0	No
Bed 3	1	3000	3656	E	0	Yes
Bed 3	1	3000	2436	N	6542	Yes
Bed 2	3	3000	613	S	0	No
Bed 2	1	3000	3518	S	0	Yes
Bed 2	1	3000	2996	E	0	Yes
Bed 2	4	3000	1906	W	0	No
Bed 2	3	3000	636	S	0	No
Bed 2	3	3000	926	W	0	No
Living/Kitchen	1	3000	4415	E	2339	Yes
Living/Kitchen	1	3000	2077	E	2339	Yes
Living/Kitchen	1	3000	7256	N	0	No

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	152.6	

Floor type

Location	Construction	Area [m ²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	FR5 - 200mm concrete slab	11.1	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	4	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	5.8	Enclosed	R0.0	Tiles
Bed 1 Entry	FR5 - 200mm concrete slab	4.3	Enclosed	R0.0	Carpet
Entry	FR5 - 200mm concrete slab	2.4	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	14.4	Enclosed	R0.0	Timber
Laundry	FR5 - 200mm concrete slab	4.7	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	6.1	Enclosed	R0.0	Tiles
Bed 3	FR5 - 200mm concrete slab	10.9	Enclosed	R0.0	Carpet
Bed 2	FR5 - 200mm concrete slab	13.7	Enclosed	R0.0	Carpet
Pantry	FR5 - 200mm concrete slab	4.2	Enclosed	R0.0	Timber
Living/Kitchen	FR5 - 200mm concrete slab	42.3	Enclosed	R0.0	Timber

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
No Data Available			

Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Bed 1	4	Downlights	80	80	Sealed
WIR	1	Downlights	80	80	Sealed
Ensuite	2	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Bed 1 Entry	2	Downlights	80	80	Sealed
Entry	1	Downlights	80	80	Sealed
Corridor	5	Downlights	80	80	Sealed
Laundry	1	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	Sealed
Bath	2	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Bed 3	4	Downlights	80	80	Sealed
Bed 2	5	Downlights	80	80	Sealed
Pantry	1	Downlights	80	80	Sealed
Living/Kitchen	17	Downlights	80	80	Sealed
Living/Kitchen	1	Exhaust Fans	250	250	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 : 200mm: 200mm 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.

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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 expected to be heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 1301, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors Type New Home

Plans

Main plan 2523/
Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*

Conditioned* 112.4

Unconditioned* 3.3

Total 115.7

Garage -

Exposure type

exposed

NatHERS climate zone

62 Moorabbin Airport



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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



111.9 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	94.1	17.8
Load limits	91	28

Features determining load limits

Floor type	N/A
(lowest conditioned area)	
NCC climate zone 1 or 2	N
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. If 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.

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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?	☐	☐	☐	☐	☐

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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]
Bed 1	bedroom	12
WIR	nightTime	4.7
Ensuite	nightTime	5.7
Bed 1 Entry	dayTime	1
Laundry	unconditioned	3.3
Bath	dayTime	5.6
Pantry	dayTime	4.3
Entry	dayTime	5.2
Corridor 1	dayTime	5.3
Living/Kitchen	kitchen	38.1
Corridor 2	dayTime	3.3
Bed 3	bedroom	17.1
Bed 2	bedroom	10.3

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-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Bed 1	CAP-055-35 A	W1-FG	2750	2000	fixed	0.0	S	No
Pantry	CAP-055-35 A	W1-FG	2750	1080	fixed	0.0	S	No
Living/Kitchen	CAP-055-35 A	W1-FG	2750	1200	fixed	0.0	S	No
Living/Kitchen	CAP-057-09 A	W3-SD	2750	3250	sliding	60.0	E	No
Living/Kitchen	CAP-057-09 A	W3-SD	2750	2000	sliding	45.0	E	No

Bed 3	CAP-055-35 A	W1-FG	2750	1750	fixed	0.0	E	No
Bed 2	CAP-055-35 A	W1-FG	2750	1750	fixed	0.0	E	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 [m²]	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 [m²]	Orientation	Outdoor shade	Diffuser
No Data Available							

External door schedule

Location	Height [mm]	Width [mm]	Opening %	Orientation
Bed 1	2750	400	90.0	S
Living/Kitchen	2750	400	90.0	S
Bed 3	2750	400	90.0	E
Bed 2	2750	400	90.0	E

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No

2	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
3	GIW24020 - Double Plasterboard Core Internal Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No
4	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Bed 1	1	3000	3068	S	0	No
Bed 1	2	3000	3894	W	0	No
WIR	2	3000	132	N	0	No
WIR	2	3000	2383	W	0	No
Ensuite	2	3000	1963	W	0	No
Laundry	3	3000	1263	N	0	No
Bath	3	3000	3000	S	0	No
Pantry	1	3000	2381	S	0	No
Entry	2	3000	3000	S	0	No
Entry	3	3000	4366	N	0	No
Entry	4	3000	1189	W	0	No
Living/Kitchen	1	3000	4132	S	0	No
Living/Kitchen	1	3000	6277	E	2232	Yes
Bed 3	3	3000	4022	W	0	No
Bed 3	1	3000	4022	E	0	No
Bed 3	1	3000	4241	N	0	Yes
Bed 2	1	3000	2175	S	6203	Yes
Bed 2	1	3000	3602	E	0	No

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Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	143.4	

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Bed 1	FR5 - 200mm concrete slab	12	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	4.7	Enclosed	R0.0	Carpet

Ensuite	FR5 - 200mm concrete slab	5.7	Enclosed	R0.0	Tiles
Bed 1 Entry	FR5 - 200mm concrete slab	1	Enclosed	R0.0	Timber
Laundry	FR5 - 200mm concrete slab	3.3	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	5.6	Enclosed	R0.0	Tiles
Pantry	FR5 - 200mm concrete slab	4.3	Enclosed	R0.0	Timber
Entry	FR5 - 200mm concrete slab	5.2	Enclosed	R0.0	Timber
Corridor 1	FR5 - 200mm concrete slab	5.3	Enclosed	R0.0	Timber
Living/Kitchen	FR5 - 200mm concrete slab	38.1	Enclosed	R0.0	Timber
Corridor 2	FR5 - 200mm concrete slab	3.3	Enclosed	R0.0	Timber
Bed 3	FR5 - 200mm concrete slab	17.1	Enclosed	R0.0	Carpet
Bed 2	FR5 - 200mm concrete slab	10.3	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Bed 1	Plasterboard	R4.6	No
WIR	Plasterboard	R4.6	No
Ensuite	Plasterboard	R4.6	No
Bed 1 Entry	Plasterboard	R4.6	No
Laundry	Plasterboard	R4.6	No
Bath	Plasterboard	R4.6	No
Pantry	Plasterboard	R4.6	No
Entry	Plasterboard	R4.6	No
Corridor 1	Plasterboard	R4.6	No
Living/Kitchen	Plasterboard	R4.6	No
Corridor 2	Plasterboard	R4.6	No
Bed 3	Plasterboard	R4.6	No
Bed 2	Plasterboard	R4.6	No

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Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Bed 1	5	Downlights	80	80	Sealed
WIR	1	Downlights	80	80	Sealed
Ensuite	2	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Bed 1 Entry	1	Downlights	80	80	Sealed
Laundry	1	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	Sealed
Bath	2	Downlights	80	80	Sealed

NatHERS Certificate

6 Star Rating as of 27 Feb 2026

Bath	1	Exhaust Fans	250	250	Sealed
Pantry	1	Downlights	80	80	Sealed
Entry	2	Downlights	80	80	Sealed
Corridor 1	2	Downlights	80	80	Sealed
Living/Kitchen	15	Downlights	80	80	Sealed
Living/Kitchen	1	Exhaust Fans	250	250	Sealed
Corridor 2	1	Downlights	80	80	Sealed
Bed 3	7	Downlights	80	80	Sealed
Bed 2	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 : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

Thermal bridging schedule for steel wall 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

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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.	

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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 being heated or cooled on standard occupancy assumptions. 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)

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Nationwide House Energy Rating Scheme® NatHERS® Certificate

Thermal performance
star rating

Generated on 27 Feb 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address 1501, 852-858 Glenferrie Rd,
Hawthorn, VIC, 3122

Lot/DP -

NCC Class* Class 2

Floor/all Floors

Type New Home

Plans

Main plan 2523/
Prepared by Wardle Studio

Construction and environment

Assessed floor area [m²]*	Exposure type
Conditioned* 127.3	exposed
Unconditioned* 3.3	NatHERS climate zone
Total 130.6	62 Moorabbin Airport
Garage -	



Accredited assessor

Name Gary Wertheimer

Business name GIW Environmental Solutions

Email gary@giv.com.au

Phone 03904451111

Accreditation No. DMN/10/2024

Assessor Accrediting Organisation Design Matters National

Declaration of interest No

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NCC Requirements

NCC provisions Volume 1

State/Territory variation No

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 [MJ/m²]

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	45.7	18.9
Load limits	91	28

Features determining load limits

Floor type	N/A
(lowest conditioned area)	
NCC climate zone 1 or 2	N
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. If 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.

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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

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?

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?

Does the external wall bulk insulation (R-value) shown on the wall EWS 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?

Does the floor insulation (R-value) shown on the NatHERS stamped plans or as installed match what is shown in the 'Floor type' table of this certificate?

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?

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?

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?

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.

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".

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?

Page 3 of 12

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 [m ²]
Living/Kitchen	kitchen	46.9
Pantry	dayTime	3.9
Laundry	unconditioned	3.3
Bed 3	bedroom	11.4
Bed 2	bedroom	12.9
Bed 1	bedroom	13.7
Bed 1 Entry	dayTime	1.9
WIR	nightTime	8.3
Ensuite	nightTime	9.5
Bath	dayTime	5.3
Powder Room	dayTime	3.7
Day 25	dayTime	3.6
Corridor	dayTime	6.3

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
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

Window and glazed door schedule

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Living/Kitchen	THC-010-21 A	W3-SD	2750	4000	sliding	60.0	N	No
Living/Kitchen	THC-033-07 B	W1-FG	2750	1200	fixed	0.0	N	No
Living/Kitchen	THC-033-07 B	W1-FG	2750	1750	fixed	0.0	W	No
Living/Kitchen	THC-033-07 B	W1-FG	2750	1750	fixed	0.0	W	No
Bed 3	THC-033-07 B	W1-FG	2750	1750	fixed	0.0	W	No

Bed 2	THC-033-07 B	W1-FG	2750	1750	fixed	0.0	W	No
Bed 1	THC-033-07 B	W1-FG	2750	2300	fixed	0.0	S	No
Bed 1	THC-033-07 B	W1-FG	2750	1750	fixed	0.0	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 no.	Opening	Area	Width	Orientation	Outdoor shade	Indoor shade
			%	[m²]	[mm]			
No Data Available			This copied document to be made available					

Skylight* type and performance

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available	Planning and Environment Act 1987. The document must not be used for any purpose which may breach any	

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
Living/Kitchen	2750	400	90.0	N
Living/Kitchen	2750	400	90.0	W
Living/Kitchen	2750	400	90.0	W
Bed 3	2750	400	90.0	W
Bed 2	2750	400	90.0	W
Bed 1	2750	400	90.0	W

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*

1	GIW24020 - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.3)	No
2	GIW24020 - External Brick Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
3	GIW24020 - 2X Double Plasterboard Internal Lobby Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.9)	No

External wall schedule

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Living/Kitchen	1	3000	4482	E	0	No
Living/Kitchen	2	3000	4508	N	2416	Yes
Living/Kitchen	2	3000	2346	N	2416	Yes
Living/Kitchen	2	3000	7114	W	0	No
Pantry	1	3000	1641	E	0	No
Laundry	1	3000	1295	E	0	No
Bed 3	2	3000	3020	W	0	No
Bed 2	2	3000	3031	W	0	No
Bed 1	2	3000	4649	W	0	No
Bed 1	2	3000	3147	W	0	No
WIR	2	3000	3181	S	0	No
Ensuite	2	3000	3097	S	0	No
Ensuite	3	3000	2909	E	0	No
Ensuite	3	3000	1824	N	0	No
Ensuite	3	3000	369	E	0	No
Bath	3	3000	1843	E	0	No
Bath	3	3000	744	N	0	No
Powder Room	3	3000	1749	E	0	No
Day 25	3	3000	737	S	0	No
Day 25	3	3000	1247	E	0	No

Internal wall type

Wall ID	Wall type	Area [m²]	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	154.9	

Floor type

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
----------	--------------	-----------	-----------------------	----------------------------	----------

Living/Kitchen	FR5 - 200mm concrete slab	46.9	Enclosed	R0.0	Timber
Pantry	FR5 - 200mm concrete slab	3.9	Enclosed	R0.0	Timber
Laundry	FR5 - 200mm concrete slab	3.3	Enclosed	R0.0	Tiles
Bed 3	FR5 - 200mm concrete slab	11.4	Enclosed	R0.0	Carpet
Bed 2	FR5 - 200mm concrete slab	12.9	Enclosed	R0.0	Carpet
Bed 1	FR5 - 200mm concrete slab	13.7	Enclosed	R0.0	Carpet
Bed 1 Entry	FR5 - 200mm concrete slab	1.9	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	8.3	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	9.5	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	5.3	Enclosed	R0.0	Tiles
Powder Room	FR5 - 200mm concrete slab	3.7	Enclosed	R0.0	Tiles
Day 25	FR5 - 200mm concrete slab	3.6	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	6.3	Enclosed	R0.0	Timber

Ceiling type

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Living/Kitchen	Plasterboard	R4.6	No
Pantry	Plasterboard	R4.6	No
Laundry	Plasterboard	R4.6	No
Bed 3	Plasterboard	R4.6	No
Bed 2	Plasterboard	R4.6	No
Bed 1	Plasterboard	R4.6	No
Bed 1 Entry	Plasterboard	R4.6	No
WIR	Plasterboard	R4.6	No
Ensuite	Plasterboard	R4.6	No
Bath	Plasterboard	R4.6	No
Powder Room	Plasterboard	R4.6	No
Day 25	Plasterboard	R4.6	No
Corridor	Plasterboard	R4.6	No

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Ceiling penetrations*

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Living/Kitchen	18	Downlights	80	80	Sealed
Living/Kitchen	1	Exhaust Fans	250	250	Sealed
Pantry	1	Downlights	80	80	Sealed
Laundry	1	Downlights	80	80	Sealed
Laundry	1	Exhaust Fans	250	250	Sealed
Bed 3	4	Downlights	80	80	Sealed

NatHERS Certificate

7.8 Star Rating as of 27 Feb 2026

Bed 2	5	Downlights	80	80	Sealed
Bed 1	5	Downlights	80	80	Sealed
WIR	3	Downlights	80	80	Sealed
Ensuite	3	Downlights	80	80	Sealed
Ensuite	1	Exhaust Fans	250	250	Sealed
Bath	2	Downlights	80	80	Sealed
Bath	1	Exhaust Fans	250	250	Sealed
Powder Room	1	Downlights	80	80	Sealed
Powder Room	1	Exhaust Fans	250	250	Sealed
Day 25	1	Downlights	80	80	Sealed
Corridor	2	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]
SlabExt:Slab - Suspended Slab - External Insul 200mm: 200mm Suspended Slab - External Insul	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.	

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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 being heated or cooled on standard occupancy assumptions. 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)

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Appendix C: Preliminary J4D6 Façade Calculator

J1.5 Façade Calculator

Address	846-858 Glenferrie Road, Hawthorn
Climate Zone	6
Building Classification	Class 5
Level	GF

	North	East	South	West	Internal
Façade area (m2)	106.6	0.0	133.0	149.6	0.0

Number of Rows 12

Window No.	Orientation	Dimensions		Area (m2)	Shading (m)	
		Height (m)	Width (m)		P	H
Retail 02 W Fixed	West	2.72	4	10.88	2	3.68
Retail 02 W Fixed	West	3.13	1.71	5.3523	2	3.84
Retail 02 W Fixed	West	2.35	1.23	2.8905	2.75	4.1
Retail 02 W Sliding Doo West		3.13	2.1	6.573	2.75	4.1
Retail 02 W Fixed	West	3	2.5	7.5	2	4.1
Retail 01 N Fixed	North	3.3	2.74	9.042	5.86	4.1
Retail 01 W Fixed	West	3.3	5	16.5	2	4.1
Retail 01 W Fixed	West	3.72	3.8	14.136	2	4.1
Retail 01 W Sliding Doo West		2.96	2.1	6.216	2.75	4.35
Retail 01 W Fixed	West	2.4	1.2	2.88	2.75	4.35
Retail 01 W Fixed	West	3.4	6.26	21.284	2	4.52
Retail 01 S Fixed	South	3.72	0.47	1.7484	3.6	4.1

RESULTS

Method 1	U-Value	SHGC	Min. Wall R-values
North	7.50	0.87	1.4
East	7.50	0.87	1.4
South	7.50	0.24	1.4
West	2.73	0.33	1
Internal	7.50		1.4

Method 2	U-Value	SHGC
	5.66	0.29

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Appendix D: Renewable Energy

Inputs Solar PV

Peak Wattage of System	15.0 kWp
Azimuth	0 degrees
Inclination	10 degrees

Outputs Solar PV

Electricity Produced per Year	20,102 kWh
No. Panels Required	21
Total Roof Area Required	50 sqm
Annual Carbon Savings	22,514 kg CO2

Economic Output

Cost of System	22,500 \$
Annual Savings	4,020 \$
Simple Payback	6 Years

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Appendix E: Daylight Modelling

Scope of Modelling

We have undertaken daylight modelling for 17 sample apartments assessing both living and bedroom areas. Apartments 101, 103, 105, 107, 108, 201, 203, 205, 208, 303, 305, 307, 405, 406, 407, 503 and 505 have been selected with consideration of internal layout, inherent and adjacent building shading features. These apartments reflect a worst-case scenario with all other units anticipated to achieve the BESS performance requirements.

The development has been modelled with the following massing scenario to the adjacent sites:

- North: Existing 7 storey building at 862 Glenferrie Road.
- East: Existing single storey dwellings at Sercombe Grove across Bluestone Laneway.
- South: Equitable development rights scenario modelled in accordance with Upco advice.
- West: Glenferrie Road.

Methodology

The daylight levels in apartments are benchmarked against the best practice requirements as set out under the Built Environment Sustainability Scorecard (BESS) tool: Indoor Environment Quality (IEQ) – Daylight Access Living Areas and Bedrooms. These levels are as follows:

“Dwellings should achieve the following daylight factors (DF)

- *80% of the total number of living rooms achieve a daylight factor greater than 1% to 90% of the floor area of each living area, including kitchens.*
- *80% of the total number of bedrooms achieve a daylight factor greater than 0.5% to 90% of the floor area in each room.”*

The daylight modelling has been completed using the Radiance software suite, an accurate computing program used to predict light levels in a space prior to construction. Scene geometric data and material properties are interfaced into the Radiance software using DesignBuilder.

Daylight Factor has been calculated using a CIE uniform cloudy sky.

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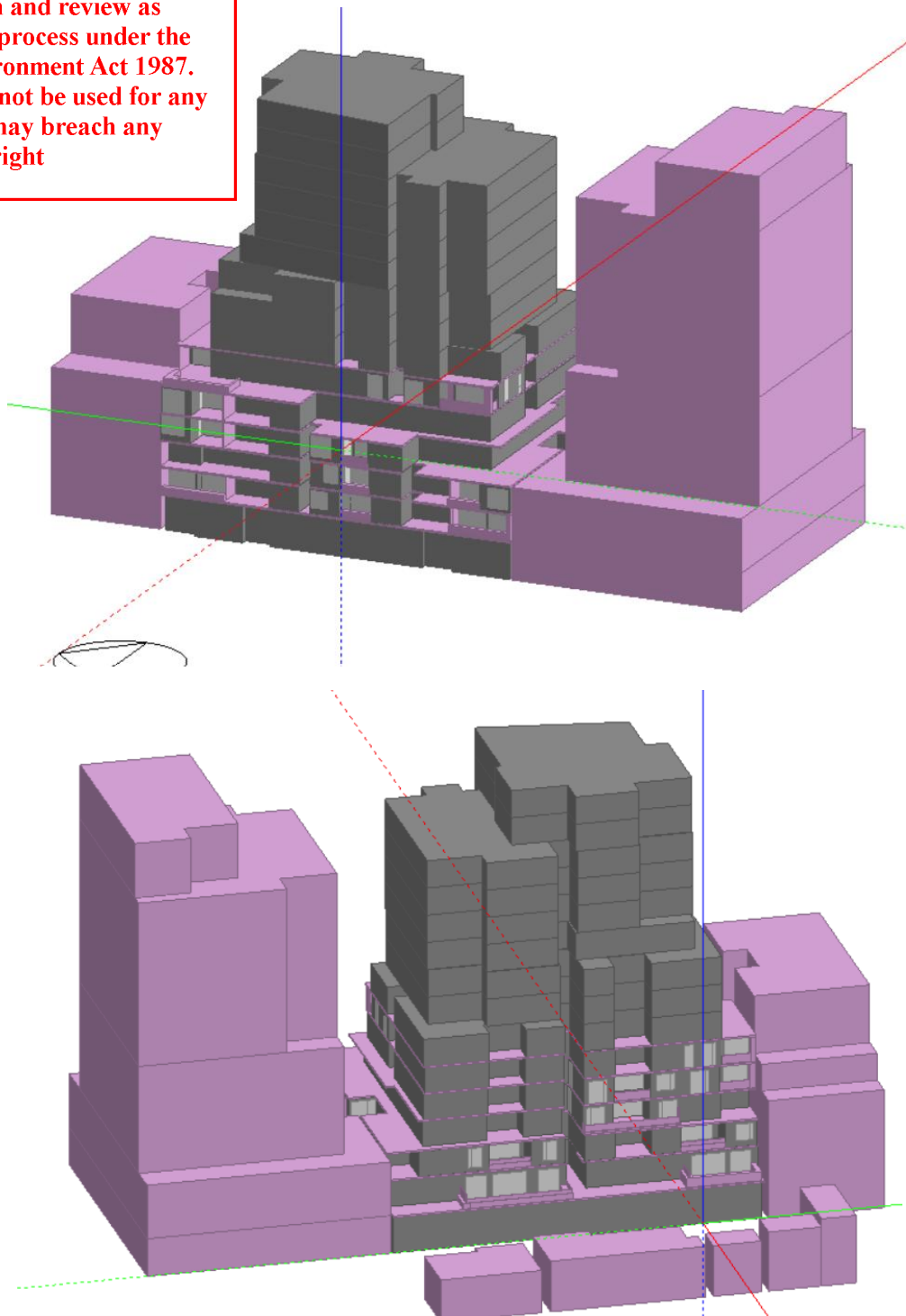


Figure 4 – DesignBuilder model of proposed and adjacent buildings

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Modelling Assumptions

The following assumptions have been made with respect to the modelling:

- Modelled window dimensions and shading structures are as depicted on the Architectural drawings.
- The glazing performance used for external windows is as follows:
 - Fixed Windows: Double glazed, clear window with a total system VLT of 0.65.
 - Sliding Doors: Double glazed, clear window with a total system VLT of 0.61.
 - Awning/Casement Windows: Double glazed, clear window with a total system VLT of 0.45.
- The reflectance of all materials is in accordance with the below:
 - Internal Floors: 0.3
 - Internal Walls: 0.94
 - Ceilings: 0.94
 - External Floors: 0.6
 - External Walls: 0.6
- Transient and unoccupied spaces such as corridors and wardrobes have been excluded from the modelled area.
- The reflectance of external buildings and structures is assumed to be 0.4.

Daylight Results – Numerical

The daylight results for living areas of 846-858 Glenferrie Road, Hawthorn can be summarised as follows:

Area	Floor Area (m2)	Floor Area above DF1 (m2)	% of floor area above DF1	Status
101 Living	34.0	34.0	100.0	Compliant
103 Living	31.4	31.4	100.0	Compliant
105 Living	40.1	35.4	88.3	Non-compliant
107 Living	32.2	31.9	99.0	Compliant
108 Living	34.3	34.1	99.3	Compliant
201 Living	34.2	34.2	100.0	Compliant
203 Living	32.0	32.0	100.0	Compliant
205 Living	40.3	35.4	87.8	Non-compliant
208 Living	32.7	32.7	100.0	Compliant
303 Living	34.3	27.4	79.8	Non-compliant
305 Living	30.9	25.7	83.1	Non-compliant
307 Living	33.7	28.8	85.5	Non-compliant

Area	Floor Area (m2)	Floor Area above DF1 (m2)	% of floor area above DF1	Status
405 Living	32.6	27.3	83.9	Non-compliant
406 Living	35.4	35.4	100.0	Compliant
407 Living	34.0	26.7	78.5	Non-compliant
503 Living	35.4	35.4	100.0	Compliant
505 Living	35.7	35.7	100.0	Compliant

The daylight results for bedrooms of 846-858 Glenferrie Road, Hawthorn can be summarised as follows:

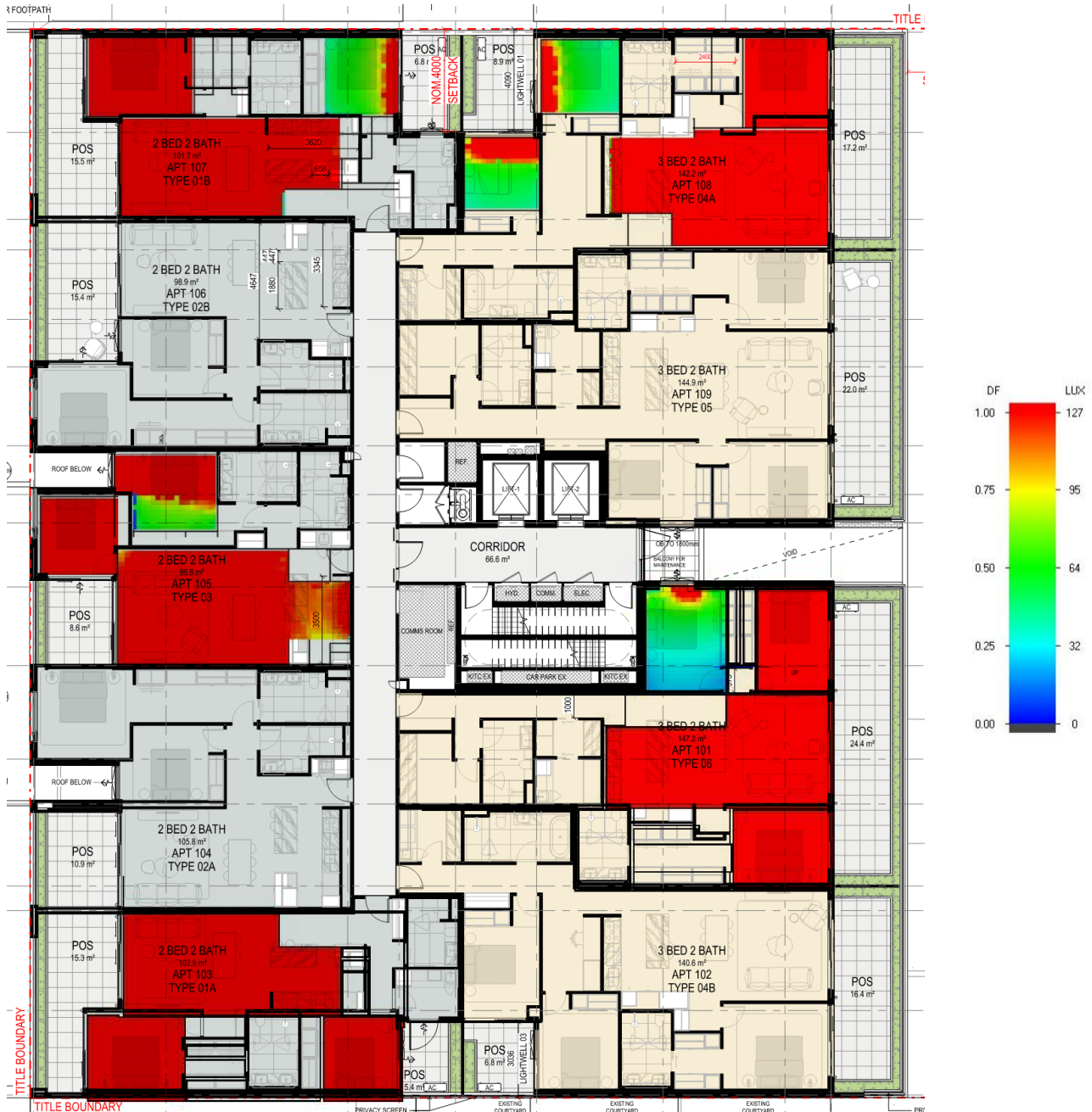
Area	Floor Area (m2)	Floor Area above DF0.5 (m2)	% of floor area above DF0.5	Status
101 Bed 1	12.4	12.4	100.0	Compliant
101 Bed 2	12.6	12.6	100.0	Compliant
101 Bed 3	13.2	5.2	39.4	Non-compliant
103 Bed 1	12.8	12.8	100.0	Compliant
103 Bed 2	10.4	10.4	100.0	Compliant
105 Bed 1	11.8	11.3	95.4	Compliant
105 Bed 2	9.9	9.9	100.0	Compliant
107 Bed 1	12.7	12.7	100.0	Compliant
107 Bed 2	9.0	7.5	83.4	Non-compliant
108 Bed 1	10.9	10.9	100.0	Compliant
108 Bed 2	9.0	5.5	61.2	Non-compliant
108 Bed 3	8.4	5.1	60.6	Non-compliant
201 Bed 1	11.1	11.1	100.0	Compliant
201 Bed 2	12.6	12.6	100.0	Compliant
201 Bed 3	13.0	4.4	33.5	Non-compliant
203 Bed 1	13.5	13.5	100.0	Compliant
203 Bed 2	10.4	10.4	100.0	Compliant
205 Bed 1	11.7	11.4	97.3	Compliant
205 Bed 2	9.3	9.3	100.0	Compliant
208 Bed 1	13.6	13.6	100.0	Compliant
208 Bed 2	10.9	2.8	25.4	Non-compliant

Area	Floor Area (m2)	Floor Area above DF0.5 (m2)	% of floor area above DF0.5	Status
208 Bed 3	10.1	4.2	41.8	Non-compliant
303 Bed 1	11.3	11.3	100.0	Compliant
303 Bed 2	12.6	12.6	100.0	Compliant
305 Bed 1	11.8	11.8	100.0	Compliant
305 Bed 2	9.0	9.0	100.0	Compliant
307 Bed 1	14.9	14.9	100.0	Compliant
307 Bed 2	9.9	9.9	100.0	Compliant
307 Bed 3	11.3	3.3	29.4	Non-compliant
405 Bed 1	11.8	11.8	100.0	Compliant
405 Bed 2	10.2	10.2	100.0	Compliant
406 Bed 1	12.7	12.7	100.0	Compliant
406 Bed 2	10.3	9.3	90.2	Compliant
407 Bed 1	14.6	14.6	100.0	Compliant
407 Bed 2	10.0	10.0	100.0	Compliant
407 Bed 3	11.5	3.8	33.1	Non-compliant
503 Bed 1	11.3	11.3	100.0	Compliant
503 Bed 2	8.7	8.7	100.0	Compliant
503 Bed 3	12.5	12.5	100.0	Compliant
505 Bed 1	12.2	12.2	100.0	Compliant
505 Bed 2	9.6	9.6	100.0	Compliant
503 Bed 1	11.3	11.3	100.0	Compliant

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Daylight Results – Visual



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Figure 6 - Daylight Map - Level 2

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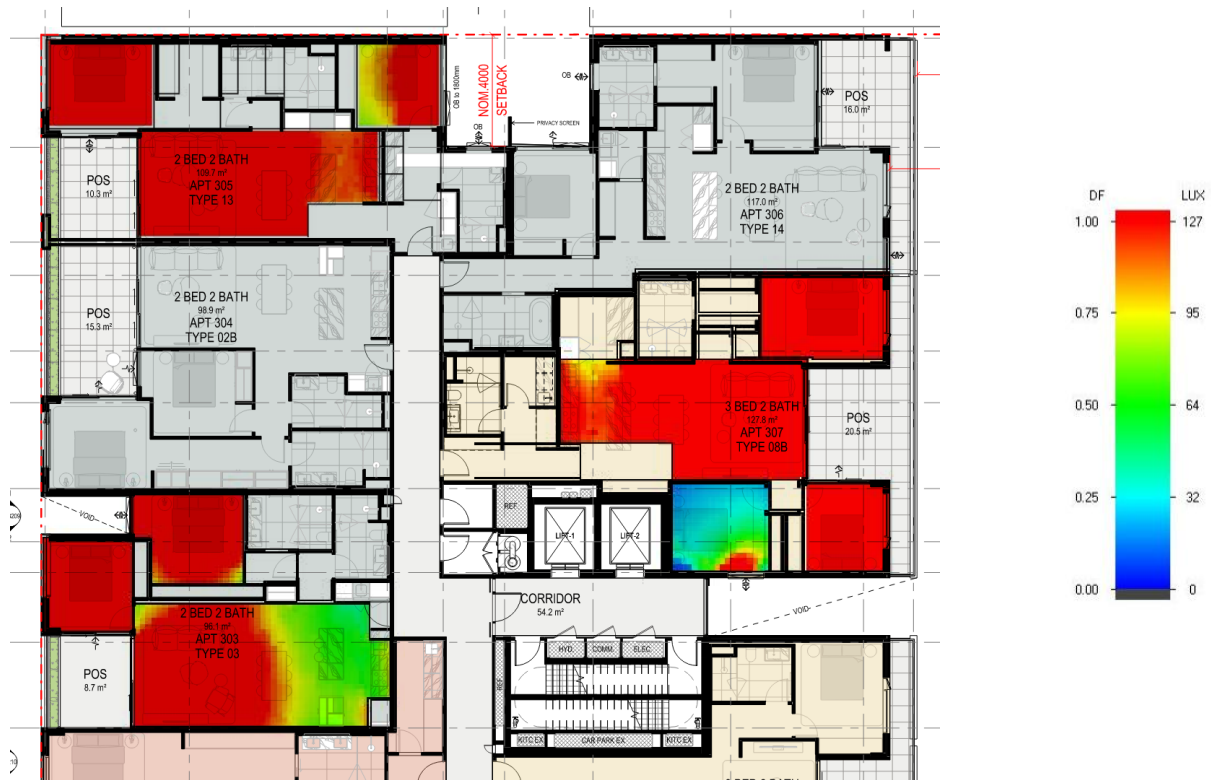


Figure 7 - Daylight Map – Level 3

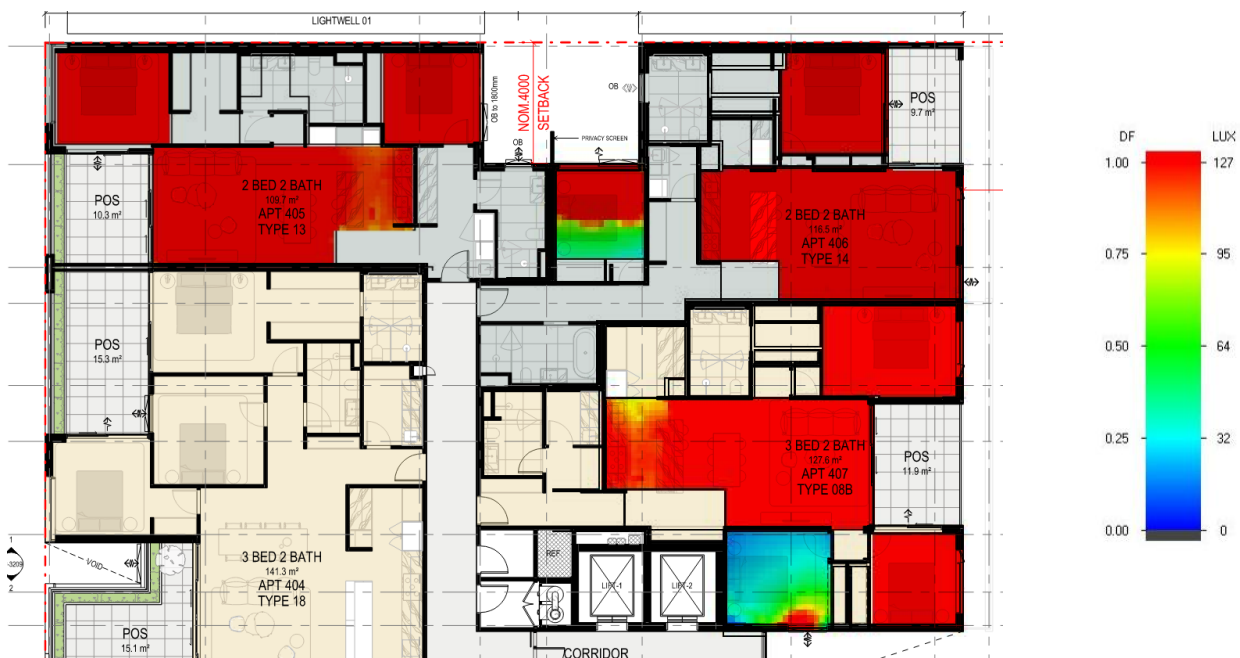


Figure 8 - Daylight Map – Level 4

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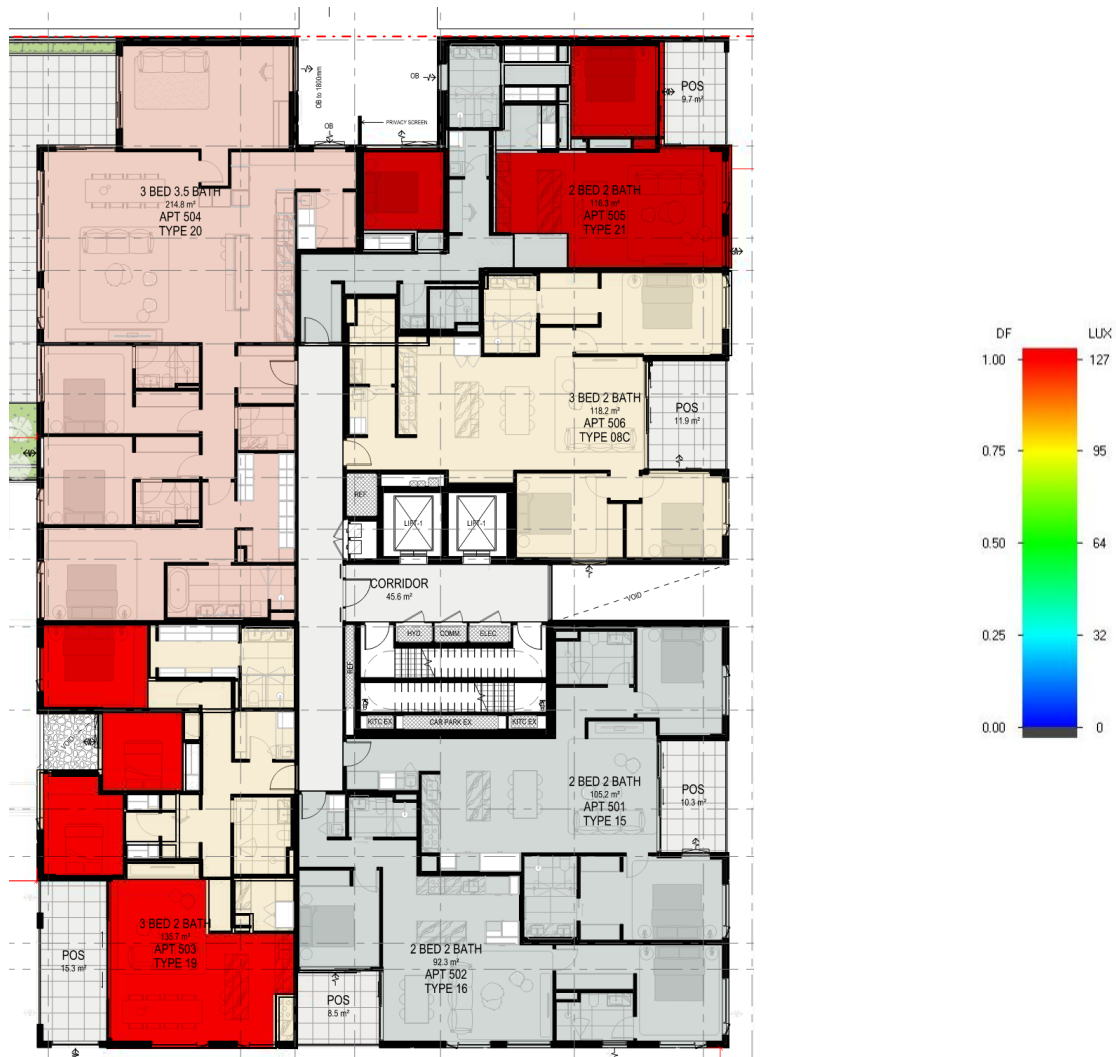


Figure 9 - Daylight Map – Level 5

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Overall Building Results

Apartment No.	Total Living Areas	Living Areas Compliant	Total Bedrooms	Bedrooms Compliant
101	1	1	3	2
102	1	1	3	2
103	1	1	2	2
104	1	1	2	2
105	1	0	2	2
106	1	1	2	2
107	1	1	2	1
108	1	1	3	1
109	1	1	3	2
201	1	1	3	2
202	1	1	3	1
203	1	1	2	2
204	1	1	2	2
205	1	0	2	2
206	1	1	2	2
207	1	1	2	1
208	1	1	3	1
209	1	0	3	2
301	1	1	3	3
302	2	2	3	3
303	1	0	2	2
304	1	1	2	2
305	1	0	2	1
306	1	1	2	1
307	1	0	3	2
401	1	1	2	2
402	1	1	2	2
403	1	1	3	3
404	1	1	3	3
405	1	0	2	2

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846-858 Glenferrie Road, Hawthorn
Sustainable Management Plan

Apartment No.	Total Living Areas	Living Areas Compliant	Total Bedrooms	Bedrooms Compliant
406	1	1	2	2
407	1	0	3	2
501	1	1	2	2
502	1	1	2	2
503	1	1	3	3
504	2	2	3	3
505	1	1	2	2
506	1	0	3	2
601	1	1	2	2
602	1	1	2	2
603	1	1	3	3
604	1	1	2	2
605	1	1	3	3
606	1	0	3	2
701	1	1	3	3
702	1	1	3	3
703	1	1	2	2
704	1	1	3	3
705	1	0	3	2
801	1	1	3	3
802	1	1	3	3
803	1	1	2	2
804	1	1	3	3
805	1	0	3	2
901	1	1	3	3
902	1	1	2	2
903	1	1	3	3
904	1	1	3	3
1001	1	1	3	3
1002	1	1	2	2
1003	1	1	3	3

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Apartment No.	Total Living Areas	Living Areas Compliant	Total Bedrooms	Bedrooms Compliant
1004	1	1	3	3
1101	1	1	3	3
1102	1	1	2	2
1103	1	1	3	3
1104	1	1	3	3
1201	1	1	3	3
1202	1	1	2	2
1203	1	1	3	3
1204	1	1	3	3
1301	1	1	3	3
1302	1	1	2	2
1303	1	1	3	3
1304	1	1	3	3
1401	1	1	3	3
1402	1	1	3	3
1501	1	1	3	3
1502	1	1	3	3
Total	80	68	203	182
Percentage	85%		90%	

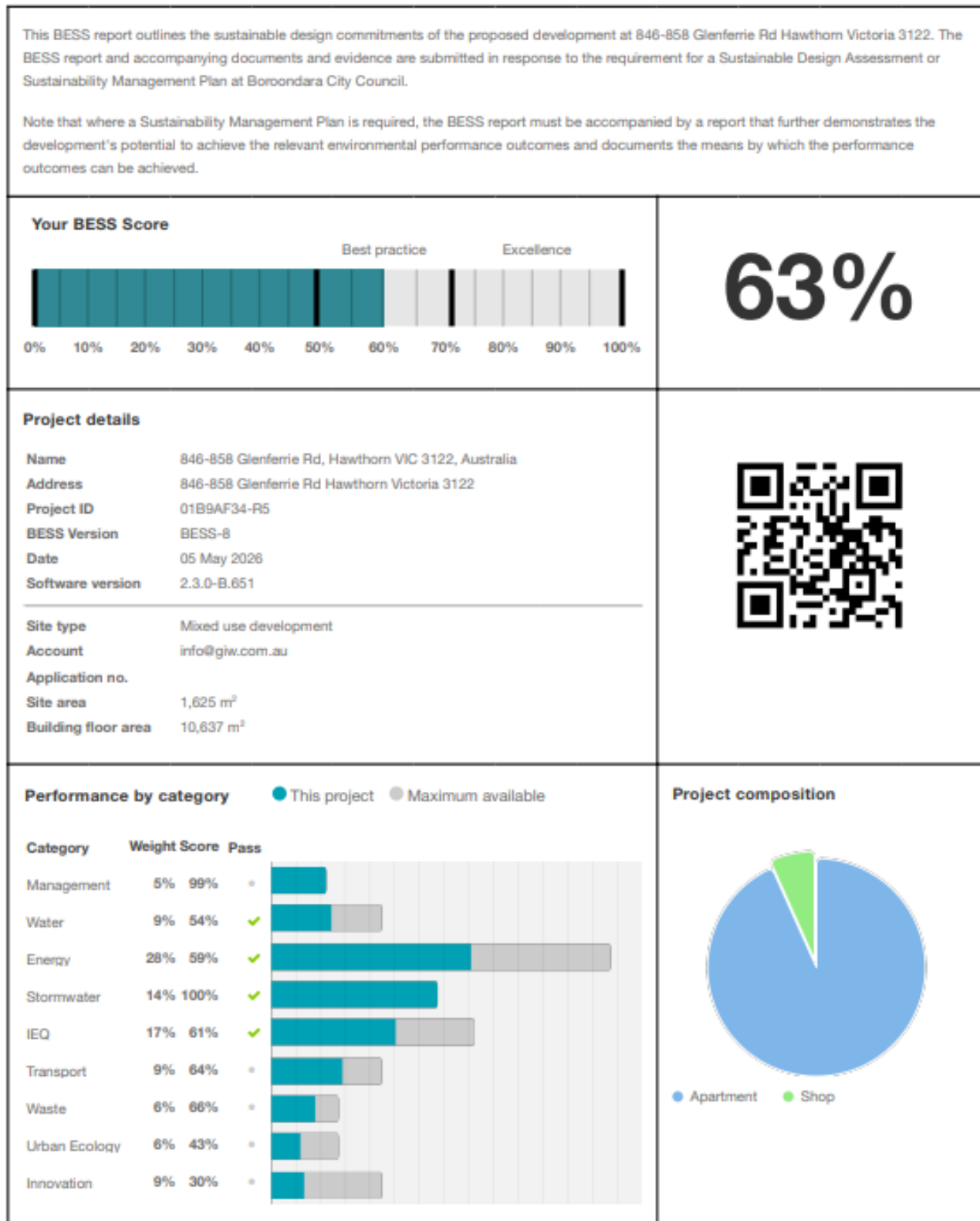
Conclusion

The development has been assessed, and it has been determined that 85% of the living areas and 90% of bedrooms will achieve the daylight factors as prescribed under BESS and therefore the development will meet the BESS IEQ guidelines for daylight.

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Appendix F: BESS Assessment



Buildings

Name	Height	Footprint	% of total footprint
Building 1	16	1,622 m²	100%

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Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	Building	% of total area
Apartment				
1003, 1103, 1203, 1303, 1401, 1501	6	142 m²	Building 1	8%
701, 801, 901, 1001, 1101, 1201, 1301	7	134 m²	Building 1	8%
1004, 1104, 1204, 1304, 1402, 1502	6	140 m²	Building 1	7%
902, 1002, 1102, 1202, 1302	5	109 m²	Building 1	5%
407, 506, 606, 705, 805	5	122 m²	Building 1	5%
605, 704, 804	3	171 m²	Building 1	4%
104, 106, 204, 206, 304	5	102 m²	Building 1	4%
103, 107, 203, 207, 305	5	105 m²	Building 1	4%
201, 209, 307	3	131 m²	Building 1	3%
702, 802	2	137 m²	Building 1	2%
604, 703, 803	3	94.1 m²	Building 1	2%
504	1	214 m²	Building 1	2%
503, 603	2	137 m²	Building 1	2%
406, 505	2	117 m²	Building 1	2%
402, 502, 602	3	92.2 m²	Building 1	2%
401, 501, 601	3	105 m²	Building 1	2%
202, 208	2	127 m²	Building 1	2%
105, 205, 303	3	96.2 m²	Building 1	2%
102, 108	2	142 m²	Building 1	2%
101, 109	2	146 m²	Building 1	2%
904	1	157 m²	Building 1	1%
903	1	161 m²	Building 1	1%
405	1	110 m²	Building 1	1%
404	1	142 m²	Building 1	1%
403	1	158 m²	Building 1	1%
306	1	117 m²	Building 1	1%
302	1	213 m²	Building 1	1%
301	1	146 m²	Building 1	1%
Total	78	9,925 m²	93%	

Non-Res Spaces

Name	Quantity	Area	Building	% of total area
Shop				
Retail 01	1	470 m²	Building 1	4%
Retail 02	1	241 m²	Building 1	2%
Total	2	711 m²	6%	

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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 3.2	Annotation: Individual utility meters to be provided to all individual commercial tenancies		-
Management 3.3	Annotation: Sub-meters to be provided to all major common area services (list each)		-
Energy 3.1	Carpark with natural ventilation or CO monitoring system		-
Energy 4.2	Location and size of solar photovoltaic system		-
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
IEQ 1.1	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
IEQ 1.2	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
IEQ 1.5	Floor plans with compliant bedrooms marked		-
IEQ 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		-
Transport 1.5	Location of non-residential visitor bicycle parking spaces		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Waste 2.1	Location of food and garden waste facilities		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 1.1	Location and size of communal spaces		-
Urban Ecology 2.1	Location and size of vegetated areas		-
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		-
Management 2.3a	Section J glazing assessment		-
Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
Energy 3.1	Details of either the fully natural carpark ventilation or CO monitoring system proposed		-
Energy 3.6	Average lighting power density and lighting type(s) to be used		-
Energy 3.7	Average lighting power density and lighting type(s) to be used		-
Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 1.1	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
IEQ 1.2	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
IEQ 1.4	A short report detailing assumptions used and results achieved.		-
IEQ 1.5	A list of compliant bedrooms		-
IEQ 2.1	A list of naturally ventilated dwellings		-

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Credit summary

Management Overall contribution 4.5%

		99%
1.1 Pre-Application Meeting		100%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		100%
2.3 Thermal Performance Modelling - Non-Residential		50%
3.1 Metering - Residential		100%
3.2 Metering - Non-Residential		100%
3.3 Metering - Common Areas		100%
4.1 Building Users Guide		100%

Water Overall contribution 9.0%

		Minimum required 50%	54%	✔ Pass
1.1 Potable Water Use Reduction			45%	
3.1 Water Efficient Landscaping			N/A	✦ Scoped Out
N/A - All landscape irrigation demand is connected to a rainwater tank.				
4.1 Building Systems Water Use Reduction			100%	

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Energy Overall contribution 27.5%

	Minimum required 50%	59%	✔ Pass
1.1 Thermal Performance Rating - Non-Residential		12%	
1.2 Thermal Performance Rating - Residential		0%	✔ Achieved
2.1 Greenhouse Gas Emissions		4%	
2.2 Peak Demand		0%	
2.6 Electrification		100%	
2.7 Energy consumption		100%	
3.1 Carpark Ventilation		100%	
3.2 Hot Water		100%	
3.4 Clothes Drying		0%	
3.6 Internal Lighting - Apartments		100%	
3.7 Internal Lighting - Non-Residential		100%	
4.1 Combined Heat and Power (cogeneration / trigeneration)		N/A	✦ Scoped Out
No cogeneration or trigeneration system in use.			
4.2 Renewable Energy Systems - Solar		93%	
4.4 Renewable Energy Systems - Other		N/A	✦ Scoped Out
No other (non-solar PV) renewable energy is in use.			

Stormwater Overall contribution 13.5%

	Minimum required 100%	100%	✔ Pass
1.1 Stormwater Treatment		100%	

IEQ Overall contribution 16.5%

	Minimum required 50%	61%	✔ Pass
1.1 Daylight Access - Living Areas		66%	
1.2 Daylight Access - Bedrooms		66%	
1.3 Winter Sunlight		0%	
1.4 Daylight Access - Non-Residential		33%	✔ Achieved
1.5 Daylight Access - Minimal Internal Bedrooms		100%	
2.1 Effective Natural Ventilation		66%	
2.3 Ventilation - Non-Residential		33%	✔ Achieved
3.4 Thermal comfort - Shading - Non-Residential		80%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential		0%	
4.1 Air Quality - Non-Residential		100%	

Transport Overall contribution 9.0%

		64%
1.1 Bicycle Parking - Residential		100%
1.2 Bicycle Parking - Residential Visitor		100%
1.3 Bicycle Parking - Convenience Residential		0%
1.4 Bicycle Parking - Non-Residential		0%
1.5 Bicycle Parking - Non-Residential Visitor		100%
1.6 End of Trip Facilities - Non-Residential		0% Disabled
Credit 1.4 must be complete first.		
2.1 Electric Vehicle Infrastructure		100%
2.2 Car Share Scheme		0%
2.3 Motorbikes / Mopeds		0%

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Waste 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%

		43%
1.1 Communal Spaces		93%
2.1 Vegetation		50%
2.2 Green Roofs		0%
2.3 Green Walls and Facades		0%
2.4 Private Open Space - Balcony / Courtyard Ecology		100%
3.1 Food Production - Residential		0%
3.2 Food Production - Non-Residential		0%

Innovation Overall contribution 9.0%

		30%
1.1 Innovation		30%

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Management Overall contribution 4.5%

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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	
Shop	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	

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Water Overall contribution 9.0%

		Minimum required 50%	54%	✔ Pass
--	--	----------------------	-----	--------

Water Approach	
What approach do you want to use for Water?:	Use the built in calculation tools
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
Fixtures, fittings & connections profile	
Showerhead:	
101, 109	4 Star WELS (>= 6.0 but <= 7.5)
102, 108	
103, 107, 203, 207, 305	
104, 106, 204, 206, 304	
105, 205, 303	
201, 209, 307	
202, 208	
301	
302	
306	
401, 501, 601	
402, 502, 602	
403	
404	
405	
406, 505	
407, 506, 606, 705, 805	
503, 603	
504	
604, 703, 803	
605, 704, 804	
701, 801, 901, 1001, 1101, 1201, 1301	
702, 802	
902, 1002, 1102, 1202, 1302	
903	
904	
1003, 1103, 1203, 1303, 1401, 1501	
1004, 1104, 1204, 1304, 1402, 1502	
Retail 01	Scope out
Retail 02	
Bath: All	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 6 Star WELS rating
Dishwashers: All	>= 5 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out

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Washing Machine Water Efficiency:	
101, 109	Occupant to Install
102, 108	
103, 107, 203, 207, 305	ADVERTISED PLAN
104, 106, 204, 206, 304	
105, 205, 303	
201, 209, 307	
202, 208	
301	
302	
306	
401, 501, 601	
402, 502, 602	
403	Scope out
404	
405	
406, 505	
407, 506, 606, 705, 805	
503, 603	
504	
604, 703, 803	
605, 704, 804	
701, 801, 901, 1001, 1101, 1201, 1301	
702, 802	
902, 1002, 1102, 1202, 1302	Retail 01
903	
904	Retail 02
1003, 1103, 1203, 1303, 1401, 1501	
1004, 1104, 1204, 1304, 1402, 1502	

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Which non-potable water source is the dwelling/space connected to?:	
101, 109	RWT 1
102, 108	
103, 107, 203, 207, 305	
104, 106, 204, 206, 304	
105, 205, 303	
201, 209, 307	
202, 208	
301	
302	
306	
Retail 01	
Retail 02	
401, 501, 601	-
402, 502, 602	
403	
404	
405	
406, 505	
407, 506, 606, 705, 805	
503, 603	
504	
604, 703, 803	
605, 704, 804	
701, 801, 901, 1001, 1101, 1201, 1301	
702, 802	
902, 1002, 1102, 1202, 1302	
903	
904	
1003, 1103, 1203, 1303, 1401, 1501	
1004, 1104, 1204, 1304, 1402, 1502	

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Non-potable water source connected to Toilets:

101, 109	Yes
102, 108	
103, 107, 203, 207, 305	
104, 106, 204, 206, 304	
105, 205, 303	
201, 209, 307	
202, 208	
301	
302	
306	
Retail 01	
Retail 02	

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401, 501, 601	No
402, 502, 602	
403	
404	
405	
406, 505	
407, 506, 606, 705, 805	
503, 603	
504	
604, 703, 803	
605, 704, 804	
701, 801, 901, 1001, 1101, 1201, 1301	
702, 802	
902, 1002, 1102, 1202, 1302	
903	
904	
1003, 1103, 1203, 1303, 1401, 1501	
1004, 1104, 1204, 1304, 1402, 1502	

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Non-potable water source connected to Laundry (washing machine): All No

Non-potable water source connected to Hot Water System: All No

Rainwater tank profile

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

RWT 1	1,287 m ²
	-

Tank Size:

RWT 1	30,000 Litres
	-

Irrigation area connected to tank:

RWT 1	178 m ²
	-

Is connected irrigation area a water efficient garden?:

RWT 1	No
	-

Other external water demand connected to tank?:	
RWT 1	0.0 Litres/Day
-	
1.1 Potable Water Use Reduction	45%
Score Contribution	This credit contributes 83.3% 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	13942 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	10610 kL
Output	Proposed (including rainwater and recycled water use)
Project	9922 kL
Output	% Reduction in Potable Water Consumption
Project	28 %
Output	% of connected demand met by rainwater
Project	95 %
Output	How often does the tank overflow?
Project	Often
Output	Opportunity for additional rainwater connection
Project	5736 kL
3.1 Water Efficient Landscaping	N/A ✦ Scoped Out
N/A - All landscape irrigation demand is connected to a rainwater tank.	
This credit was scoped out	N/A - All landscape irrigation demand is connected to a rainwater tank.
4.1 Building Systems Water Use Reduction	100%
Score Contribution	This credit contributes 16.7% towards the category score.
Criteria	Where applicable, have measures been taken to reduce potable water consumption by >80% in the buildings air-conditioning chillers and when testing fire safety systems?
Question	Criteria Achieved ?
Project	Yes

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Energy Overall contribution 27.5%

Minimum required 50%

59%

✓ Pass

Use the BESS Deem to Satisfy (DtS) method for Non-residential No spaces?:

Dwellings Energy Approach

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

Are you installing any solar photovoltaic (PV) system(s)?: Yes

Are you installing any other renewable energy system(s)?: No

Energy Supply: All-electric

Dwelling Energy Profiles

Building: All Building 1

Below the floor is: All Another Occupancy

Above the ceiling is: All Another Occupancy

Exposed sides: All 2

NatHERS Annual Energy Loads - Heat: All 54.1 MJ/sqm

NatHERS Annual Energy Loads - Cool: All 15.5 MJ/sqm

NatHERS star rating: All 7.0

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 Heat Pump Band 1

% Contribution from solar hot water system: All 0 %

Is the hot water system shared by multiple dwellings?: All Yes

Clothes Line: All No drying facilities

Clothes Dryer: All Occupant to install

Non-residential buildings profile

Heating, Cooling & Comfort Ventilation - Electricity 1,000 kWh

Reference fabric & services:

Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services: 1,000 kWh

Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & services: 1,000 kWh

Heating - Wood - reference fabric and services: -

Heating - Wood - proposed fabric and reference services: -

Heating - Wood - proposed fabric and services: -

Hot Water - Electricity - Reference: 1,000 kWh

Hot Water - Electricity - Proposed: 1,000 kWh

Lighting - Reference: 1,000 kWh

Lighting - Proposed: 1,000 kWh

Peak Thermal Cooling Load - Reference: -

Peak Thermal Cooling Load - Proposed: -

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Solar Photovoltaic system profile		
System Size (lesser of inverter and panel capacity):	PV 1	15.0 kW peak
Orientation (which way is the system facing)?:	PV 1	North
Inclination (angle from horizontal):	PV 1	10.0 Angle (degrees)
Which Building Class does this apply to?:	PV 1	Apartment
1.1 Thermal Performance Rating - Non-Residential		12%
Score Contribution	This credit contributes 3.1% towards the category score.	
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC2022 Section J)?	
Output	Total Improvement	
Shop	0 %	
1.2 Thermal Performance Rating - Residential		0% ✓ Achieved
Score Contribution	This credit contributes 16.1% towards the category score.	
Criteria	What is the average NatHERS rating?	
Output	Average NATHERS Rating (Weighted)	
Apartment	7.0 Stars	
2.1 Greenhouse Gas Emissions		4%
Score Contribution	This credit contributes 16.9% 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	199,458 kg CO2	
Shop	114 kg CO2	
Output	Proposed Building with Proposed Services (Actual Building)	
Apartment	182,944 kg CO2	
Shop	114 kg CO2	
Output	% Reduction in GHG Emissions	
Apartment	8 %	
Shop	0 %	
2.2 Peak Demand		
Score Contribution	This credit contributes 0.4% towards the category score.	
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?	
2.6 Electrification		100%
Score Contribution	This credit contributes 17.2% towards the category score.	
Criteria	Is the development all-electric?	
Question	Criteria Achieved?	
Project	Yes	
2.7 Energy consumption		100%

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Score Contribution	This credit contributes 22% 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	1,720,572 MJ
Shop	482 MJ
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	774,820 MJ
Shop	482 MJ
Output	% Reduction in total energy
Apartment	54 %
Shop	0 %

3.1 Carpark Ventilation

100%

Score Contribution	This credit contributes 5.7% 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

3.2 Hot Water

100%

Score Contribution	This credit contributes 0.4% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?
Output	Reference
Shop	241 MJ
Output	Proposed
Shop	241 MJ
Output	Improvement
Shop	0 %

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3.4 Clothes Drying

0%

Score Contribution	This credit contributes 5.4% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?
Output	Reference
Apartment	40,995 kWh
Output	Proposed
Apartment	40,995 kWh
Output	Improvement
Apartment	0 %

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3.6 Internal Lighting - Apartments

0%

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Score Contribution	This credit contributes 5.4% 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		
3.7 Internal Lighting - Non-Residential			100%
Score Contribution	This credit contributes 0.8% towards the category score.		
Criteria	Does the maximum illumination power density (W/m2) in at least 90% of the area of the relevant building class meet the requirements in Table J7D3a of the NCC 2022 Vol 1 ?		
Question	Criteria Achieved ?		
Shop	Yes		
4.1 Combined Heat and Power (cogeneration / trigeneration)		N/A  Scoped Out	
No cogeneration or trigeneration system in use.			
This credit was scoped out		No cogeneration or trigeneration system in use.	
4.2 Renewable Energy Systems - Solar			93%
Score Contribution	This credit contributes 5.7% 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	18,178 kWh		
Output	% of Building's Energy		
Apartment	8 %		
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.	

Stormwater Overall contribution 13.5%

	Minimum required 100%	100%	✔ Pass
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Which stormwater modelling software are you using?:		Melbourne Water STORM tool	
1.1 Stormwater Treatment			100%
Score Contribution	This credit contributes 100% towards the category score.		
Criteria	Has best practice stormwater management been demonstrated?		
Question	STORM score achieved		
Project	110		
Output	Min STORM Score		
Project	100		

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IEQ Overall contribution 16.5%

		Minimum required 50%	61%	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?:	Provide our own calculations			
1.1 Daylight Access - Living Areas			66%	
Score Contribution	This credit contributes 24.6% towards the category score.			
Criteria	What % of living areas achieve a daylight factor greater than 1%			
Question	Percentage Achieved ?			
Apartment	85 %			
1.2 Daylight Access - Bedrooms			66%	
Score Contribution	This credit contributes 24.6% towards the category score.			
Criteria	What % of bedrooms achieve a daylight factor greater than 0.5%			
Question	Percentage Achieved ?			
Apartment	90 %			
1.3 Winter Sunlight			0%	
Score Contribution	This credit contributes 8.2% 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	No			
1.4 Daylight Access - Non-Residential			33%	✓ Achieved
Score Contribution	This credit contributes 3.5% towards the category score.			
Criteria	What % of the nominated floor area has at least 2% daylight factor?			
Question	Percentage Achieved?			
Shop	33 %			
1.5 Daylight Access - Minimal Internal Bedrooms			100%	
Score Contribution	This credit contributes 8.2% towards the category score.			
Criteria	Do at least 90% of dwellings have an external window in all bedrooms?			
Question	Criteria Achieved ?			
Apartment	Yes			
2.1 Effective Natural Ventilation			66%	
Score Contribution	This credit contributes 24.6% towards the category score.			
Criteria	What % of dwellings are effectively naturally ventilated?			
Question	Percentage Achieved?			
Apartment	85 %			
2.3 Ventilation - Non-Residential			33%	✓ Achieved
Score Contribution	This credit contributes 3.5% towards the category score.			

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Criteria	What % of the regular use areas are effectively naturally ventilated?
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Question	Percentage Achieved?
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Shop	0 %
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Criteria	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012?
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Question	Percentage Achieved?
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Shop	50 %
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Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?
----------	--

Question	Value
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Shop	-
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3.4 Thermal comfort - Shading - Non-Residential

80%

Score Contribution	This credit contributes 1.8% towards the category score.
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Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?
----------	---

Question	Percentage Achieved?
----------	----------------------

Shop	70 %
------	------

3.5 Thermal Comfort - Ceiling Fans - Non-Residential

0%

Score Contribution	This credit contributes 0.6% towards the category score.
--------------------	--

Criteria	What percentage of regular use areas in tenancies have ceiling fans?
----------	--

Question	Percentage Achieved?
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Shop	-
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4.1 Air Quality - Non-Residential

100%

Score Contribution	This credit contributes 0.6% towards the category score.
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Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?
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Question	Criteria Achieved ?
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Shop	Yes
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Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?
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Question	Criteria Achieved ?
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Shop	Yes
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Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?
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Question	Criteria Achieved ?
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Shop	Yes
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Transport Overall contribution 9.0%

		64%
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1.1 Bicycle Parking - Residential		100%
Score Contribution	This credit contributes 20.9% towards the category score.	
Criteria	How many secure and undercover bicycle spaces are there for residents?	
Question	Bicycle Spaces Provided ?	
Apartment	78	
Output	Min Bicycle Spaces Required	
Apartment	78	
1.2 Bicycle Parking - Residential Visitor		100%
Score Contribution	This credit contributes 20.9% towards the category score.	
Criteria	How many secure bicycle spaces are there for visitors?	
Question	Visitor Bicycle Spaces Provided ?	
Apartment	16	
Output	Min Visitor Bicycle Spaces Required	
Apartment	16	
1.3 Bicycle Parking - Convenience Residential		0%
Score Contribution	This credit contributes 10.4% towards the category score.	
Criteria	Are bike parking facilities for residents located at ground or entry level?	
Question	Criteria Achieved ?	
Apartment	No	
1.4 Bicycle Parking - Non-Residential		0%
Score Contribution	This credit contributes 1.5% towards the category score.	
Criteria	Have the planning scheme requirements for employee bicycle parking been exceeded by at least 50% (or a minimum of 2 where there is no planning scheme requirement)?	
Question	Criteria Achieved ?	
Shop	No	
Question	Bicycle Spaces Provided ?	
Shop	0	
1.5 Bicycle Parking - Non-Residential Visitor		100%
Score Contribution	This credit contributes 0.7% towards the category score.	
Criteria	Have the planning scheme requirements for visitor bicycle parking been exceeded by at least 50% (or a minimum of 1 where there is no planning scheme requirement)?	
Question	Criteria Achieved ?	
Shop	Yes	
Question	Bicycle Spaces Provided ?	
Shop	6	
1.6 End of Trip Facilities - Non-Residential		0%

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This credit is disabled		Credit 1.4 must be complete first.	
2.1 Electric Vehicle Infrastructure			100%
Score Contribution		This credit contributes 22.4% towards the category score.	
Criteria		Are facilities provided for the charging of electric vehicles?	
Question		Criteria Achieved ?	
Project		Yes	
2.2 Car Share Scheme			0%
Score Contribution		This credit contributes 11.2% 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 11.2% 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	

Waste Overall contribution 5.5%

		66%
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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	

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Urban Ecology Overall contribution 5.5%

		43%
1.1 Communal Spaces		93%
Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m² for each of the first 50 occupants * Additional 0.5m² for each occupant between 51 and 250 * Additional 0.25m² for each occupant above 251?	
Question	Common space provided	
Apartment	197 m²	
Shop	-	
Output	Minimum Common Space Required	
Apartment	131 m²	
Shop	60 m²	
2.1 Vegetation		50%
Score Contribution	This credit contributes 44.8% 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	10 %	
2.2 Green Roofs		0%
Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
2.3 Green Walls and Facades		0%
Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	No	
2.4 Private Open Space - Balcony / Courtyard Ecology		100%
Score Contribution	This credit contributes 10.4% 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%

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Score Contribution	This credit contributes 10.4% 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	54 m²

3.2 Food Production - Non-Residential	0%
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Score Contribution	This credit contributes 0.7% towards the category score.
Criteria	What area of space per occupant is dedicated to food production?
Question	Food Production Area
Shop	-
Output	Min Food Production Area
Shop	18 m²

Innovation Overall contribution 9.0%

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Innovations	
Description:	
Carbon Neutral Development	The proposed development will be established with a carbon neutral power agreement between developer, owner's corporation, and electrical retailer to provide GreenPower for all energy consumed by building (including communal areas, apartments and retail tenancy). It is the intent to maintain this agreement for a minimum of 10 years.
Bicycle Repair Station	Bicycle Repair Station Inclusion of secure, convenient and accessible equipment including repair stands, pumps and tools for fixing bicycles.
Points Targeted:	
Carbon Neutral Development	2
Bicycle Repair Station	1

1.1 Innovation		30%
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Score Contribution	This credit contributes 100% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?

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