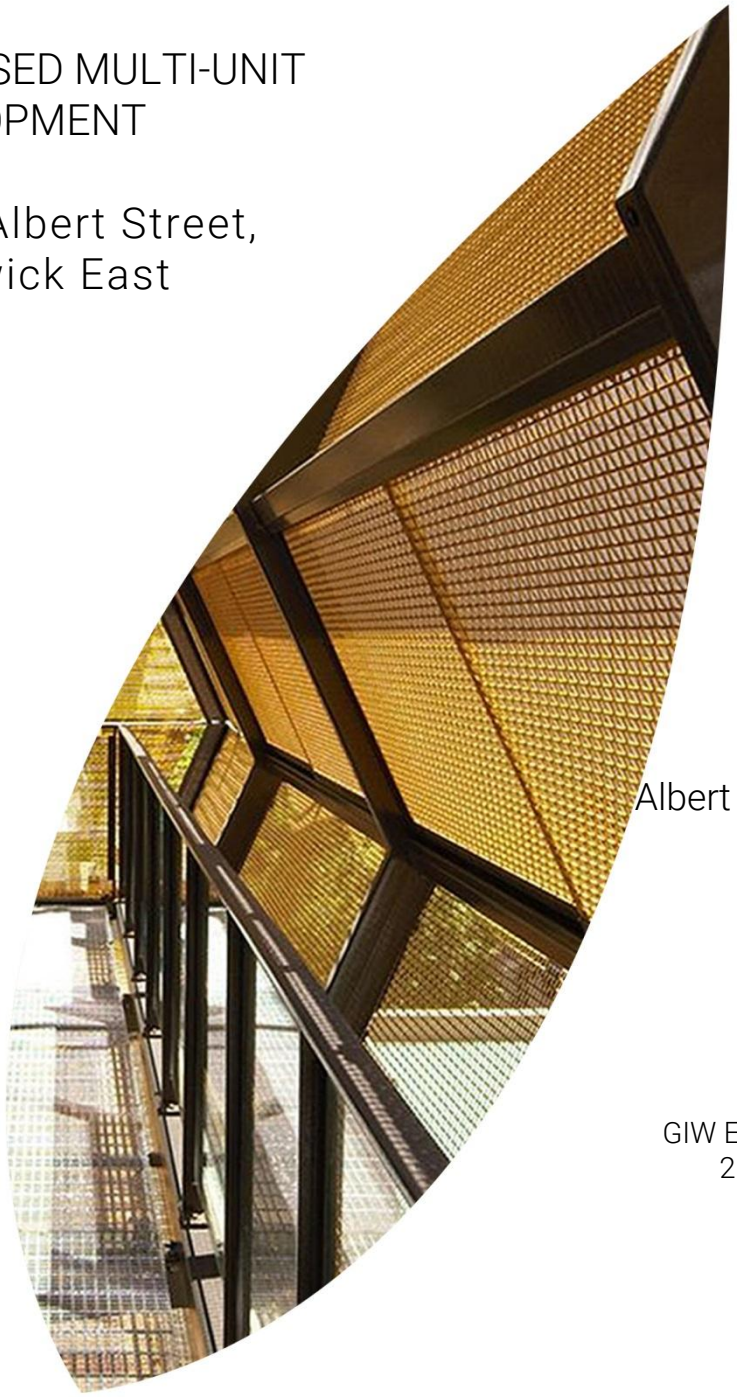
SUSTAINABLE MANAGEMENT PLAN

PROPOSED MULTI-UNIT DEVELOPMENT

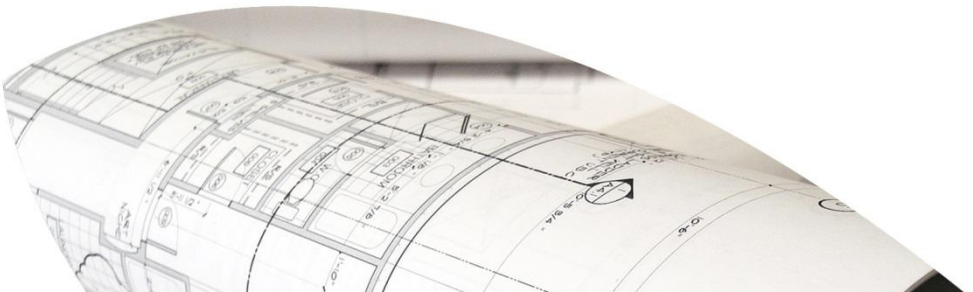
53-57 Albert Street,
Brunswick East



GIW 25181
Revision C

Prepared for:
Albert Street Developer Pty Ltd

23 September 2025



Prepared by:
GIW Environmental Solutions Pty Ltd
285 Lennox Street, Richmond
Victoria 3121, Australia
T +61 3 9044 5111
giw.com.au

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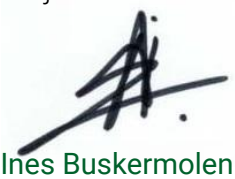
Revision History

Revision Number	Date Issued	Author	Approved	Comments
A	10/09/2025	CDW	IB	Draft
B	17/09/2025	CDW	IB	Final
C	23/09/2025	CDW	IB	Final

Prepared by:
Project Consultant

Ciaran Davis-Wall
Senior ESD Consultant
B.BSc. (Building Science)

Approved by:
Project Team Leader



Ines Buskermolen
ESD Consultant
B.Sc. (Science, Business and Innovation)
M.Sc. (Sustainable Development)

Contents

1. Introduction

Project Information

GIW Environmental Solutions Pty Ltd ("GIW") has been engaged by Albert Street Developer Pty Ltd to provide Environmentally Sustainable Design (ESD) consulting services for the proposed multi-dwelling development at 53-57 Albert Street, Brunswick East.

The proposed development will include 49 apartments constructed over 5 levels plus ground floor-mezzanine carpark and will consist of the following:

- 4 x loft apartments
- 14 x 1 bedroom apartments
- 18 x 2 bedroom apartments
- 13 x 3 bedroom apartments

The site located at 53-57 Albert Street, Brunswick East has an approximate surface area of 1,790m^2 and is currently the location of a commercial building. Distance from the site to Melbourne CBD is approximately 6.8km.

Figure 1 - Pre-existing sites at 53-57 Albert Street, Brunswick East.

Statutory Requirements

This Sustainable Management Plan (SMP) has been prepared to inform City of Merri-bek 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 Merri-bek Planning Scheme - Clause 15.01-2L-05 Environmentally Sustainable Development.

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:

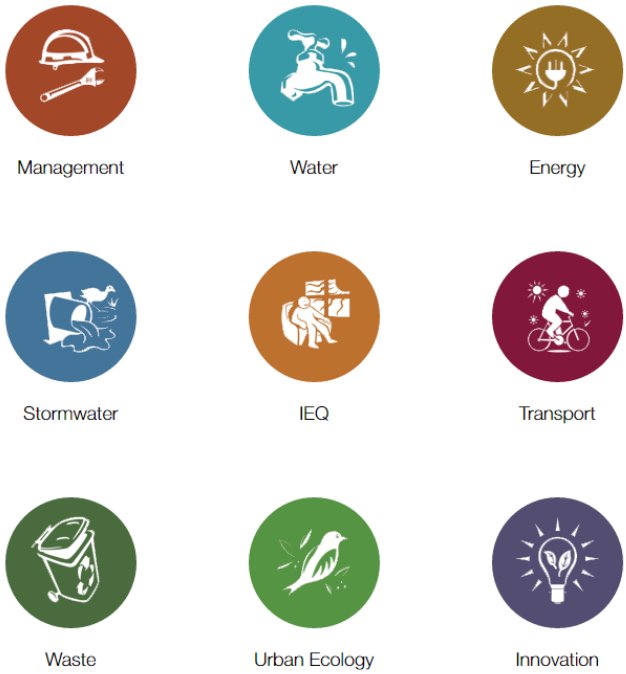


Figure 2 - BESS Environmental Categories (www.bess.net.au)

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

Responsibilities & Implementation

Albert Street Developer 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:

- JCB – Project No. 24-064 – Drawing Set: Town Planning Submission Rev A (dated: 15/09/2025).
- 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

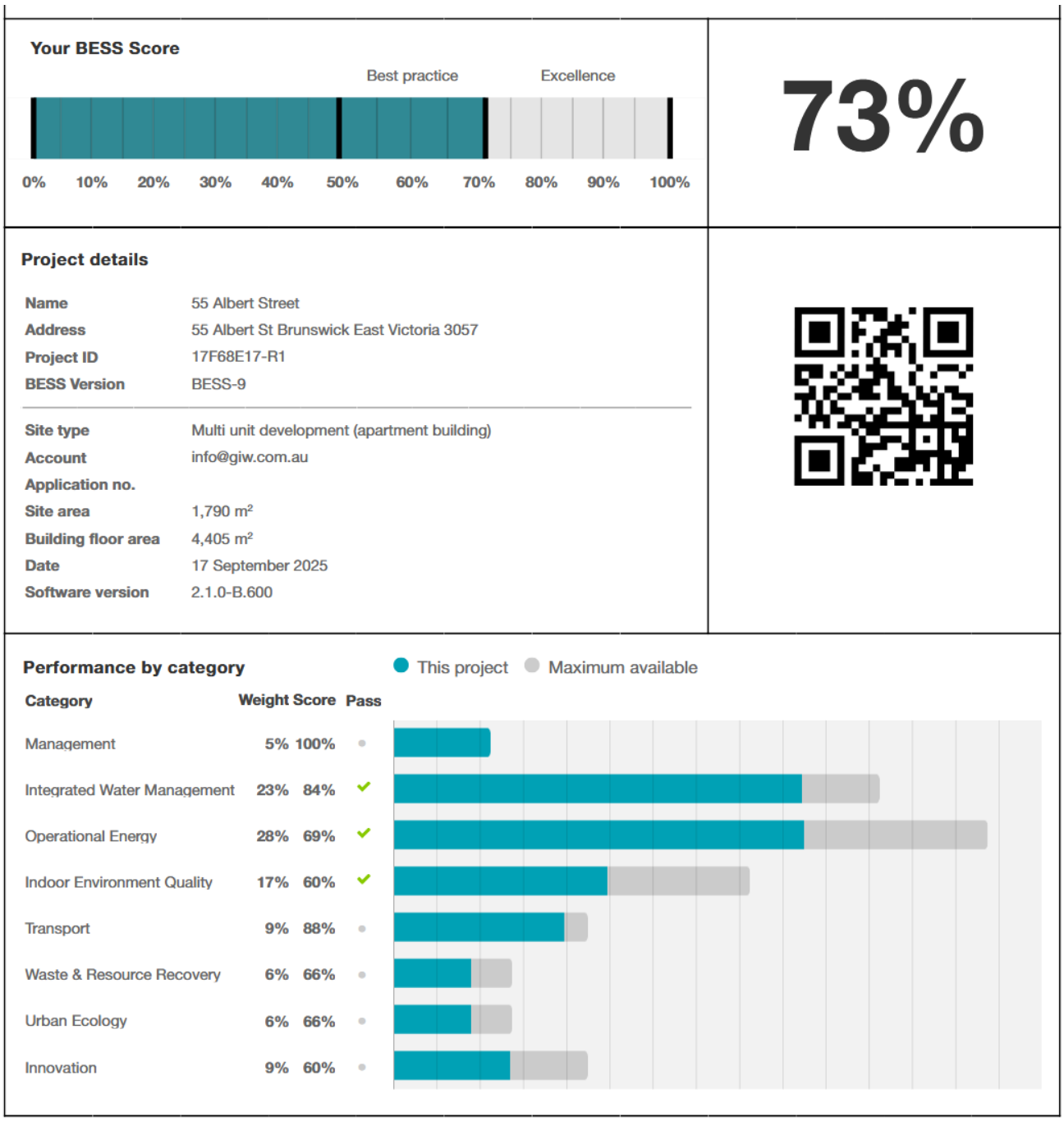
2. ESD Summary

The proposed multi-dwelling development at 53-57 Albert Street, Brunswick East will implement the following ESD initiatives:

1. The project achieves a total BESS score of 73% with no mandatory category (IEQ, Energy, Water, Stormwater) below 50%.
2. 88% (43 out of 49) of the development's apartments are naturally cross-ventilated.
3. Daylight modelling has been conducted for a representative sample of apartments. The summary result is as follows:
    - 92% of living floor area achieves >90% above DF 1
    - 83% of bedroom floor area achieves >90% above DF0.5
4. 24% (12 out of 49) of apartments achieve at least 3 hours of sunlight.
5. The development is provided with a comprehensive shading strategy.
6. The development is to achieve an 8.0 Star average NatHERS Energy Rating result.
7. The development is to utilise .
8. An 18kW Solar PV system is to be located on the roof of the proposed development.
9. Individual cold and hot water and electricity meters will be provided to the apartments and communal areas.
10. Water efficient fittings and fixtures are applied throughout.
11. A 24,000 litre rainwater tank will harvest rainwater from the roof and terraces/walkways. This tank will be connected to ground- level 2 toilets and landscape irrigation.
12. A Melbourne STORM rating of 104% is achieved.
13.
14. In total 49 bicycle spaces are to be provided for residents.
15. In total 10 bicycle spaces are to be provided for residential visitors.
16. 184m2 of communal space will be provided on the roof.

3. BESS Performance

The project achieves a total BESS score of 73% 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.



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

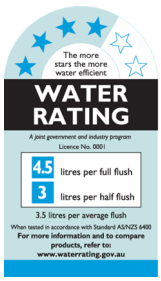
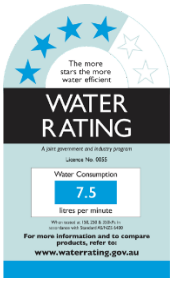
Criteria		Construction and Building Management Actions
Pre-Application Meeting	To ensure appropriate sustainable design principles and strategies are considered from the preliminary design stage of each development.	Per the previous SMP Rev 05 prepared by HvH (dated: 21/10/2022) a pre-application meeting has been undertaken with Council for the proposed development.
Metering	To provide building users with information that allows monitoring of energy and water consumption	Electricity and cold water is to be provided to each individual apartment. Lighting and general power to common areas is to be separately metered to quantify energy used for common areas spaces.
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 • Monitoring and Targeting • Building Services • Transport Facilities • Materials and Waste Policy • Expansion/Re-fit Considerations • References and Further Information

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

Council Best Practice Standard

Criteria		Development Provision
Potable Water Reduction	To reduce total potable water use due through the use of efficient fixtures, appliances, and the use of rainwater.	WELS 4 Star - Toilets  WELS 5 Star - Taps  WELS 4 Star - Showerhead  WELS 5 Star - Dishwasher 
Rainwater Collection & Reuse		A 24,000 litre rainwater tank will harvest rainwater from the roof and terraces/walkways. This tank will be connected to ground-level 2 toilets and landscape irrigation. It is estimated that this will save more than 325.5kL of potable water every year and meet 60.9% of the demand in these areas. Stormwater drainage mechanism 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.

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. The proposed development is to incorporate air-cooled HVAC systems for the residential areas within the development.

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

Council Best Practice Standard

Criteria		Development Provision
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 National Construction Code (NCC) Class 2 – Sole Occupancy Unit(s) residential building component is to be designed in accordance with NCC Section J (2019) NatHERS requirements. The residential units must achieve an average 8.0 Star rating, with no unit achieving below 5 Stars. Further to this no dwelling is to exceed the maximum allowed cooling load of 30 MJ/m2 (Climate Zone 21 Melbourne RO) In accordance with BADS Standard B35. The apartments are currently achieving an 8 Star average. This represents > 53% reduction compared to minimum NCC compliance benchmarks. The below sample ratings demonstrate the developments ability to achieve this average. Refer Appendix B for Preliminary FirstRate Certificates.

Apt No.	ACE Total MJ/M2	ACE Heating MJ/M2	ACE Cooling MJ/M2	ACE NCFA	Star Rating	Similar units
G.01	79.5	59.9	19.6	119.4	7.1	6
1.03	61.1	53.4	7.7	78.2	7.7	8
2.01	34.1	26.3	7.8	105.8	8.7	5
2.12	32.7	18.8	13.9	48.6	8.7	16
3.09	81.2	67.5	13.7	68.2	7.1	8
4.06	57.7	44.1	13.6	97.7	7.9	6
Avg	**57.7**	**45.0**	**12.7**	**86.3**	**7.9**	
Area weighted star average						**8.0**

*Apartments are assessed using FirstRate5 v5.3.2b

Construction assumptions for preliminary FirstRate ratings are listed below. Note, these assumptions are based on the sample of apartments assessed and may vary throughout the

Council Best Practice Standard

Criteria	Development Provision

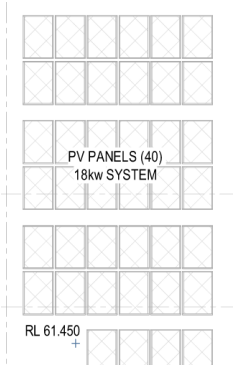
development. These assumptions are not to be relied upon for any other purpose beyond Town Planning assessment.

Element	Material	Insulation Value
Concrete slab on Grade	220mm Concrete	R3.4
Concrete Slab (where exposed below and above)	220mm Concrete	R3.65
Roof (Level 4)	220mm Concrete	R5.0
Concrete Slab where balcony above	220mm Concrete	R3.65
External Walls	Concrete	R2.7 + RFL
Party Walls – Between apartments	Single stud	R2.7
Party Walls – To common corridor	Single stud	R2.7
Party Walls – To stairwell / lift	Concrete	R2.7
Fixed windows	Thermally Broken, Aluminium Framed, Double Glazed, Argon Filled, Low-E, Clear	Total System – U-Value: 2.03 – SHGC: 0.47
Sliding doors	Thermally Broken, Aluminium Framed, Double Glazed, Argon Filled, Low-E, Clear	Total System – U-Value: 2.49 – SHGC: 0.45
Awning windows	Thermally Broken, Aluminium Framed, Double Glazed,	Total System – U-Value: 2.51 – SHGC: 0.47

Council Best Practice Standard

Criteria		Development Provision
		Argon Filled, Low-E, Clear
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 systems are to be installed and sized to maintain conditions of the habitable rooms of each apartment. The efficiency of the air conditioning system is to be within 1 star rating of best available under MEPS Post-October 2012 measurement standard.
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 individual electric instantaneous hot water systems.
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	Communal clothes drying facilities will be provided at rooftop terrace.

Council Best Practice Standard

Criteria		Development Provision
	associated with clothes drying	
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 demand.	The maximum illumination power density (W/sqm) is at least 20% lower than NCC 2019 requirements. Lighting power density shall be as follows: • Dwellings: No greater than average 4W/m^2 • POS: No greater than average 4W/m^2 • Back of house and indoor car parks: No greater than average 5W/m^2 All common area, external and carpark lighting is to be controlled with daylight, motion sensors or timers (whichever is deemed appropriate).
Renewable Energy Systems - Solar	To encourage on-site renewable energy generation and reduce greenhouse emissions.	An 18kW Solar PV system is to be located on the roof of the proposed development. The system is expected to generate approximately 24,123kWh.  Location Solar PV System Refer Appendix C – Renewable Energy

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 Melbourne Water - Stormwater Treatment Objective Relative Measure (STORM) tool has been applied to determine performance relative to Best Practice Environmental Management Guidelines (Victoria Stormwater Committee, 1999). As per City of Merri-bek Planning Scheme - 53.18 Stormwater Management in Urban Development, the development is required to achieve a STORM rating of 100% or greater. A Melbourne STORM rating of 104% is achieved via the following: • Rainwater is to be collected from the roof and balconies and directed into the 24,000 litre rainwater tank. Ground-level 2 WC's and landscape irrigation are to be connected to the rainwater tank. Refer Appendix A – WSUD Response.

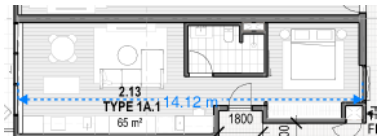
Indoor Environment Quality

Council ESD objectives:

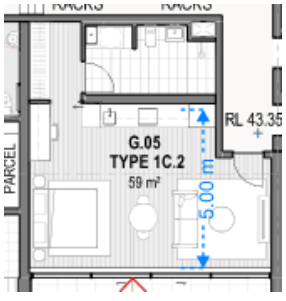
- to achieve a healthy indoor environment quality for the wellbeing of building occupants.
- to provide a naturally comfortable indoor environment will lower the need for building services, such as artificial lighting, mechanical ventilation and cooling and heating devices.

Council Best Practice Standard

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: 92 % of bedroom floor area above DF 0.5: 83 Refer Appendix D - Daylight Modelling.
Winter Sunlight	To provide a high level of amenity and reduce need for artificial heating in winter.	24% (12 out of 49) of apartments achieve at least 3 hours of sunlight.
Minimal Internal Bedrooms	90% of bedrooms have an external window.	NIL internal bedrooms.
Cross Flow Ventilation	To provide fresh air and passive cooling opportunities.	88% (43 out of 49) of the development's apartments are naturally cross-ventilated. Apartments are provided with windows on opposite or adjacent facades or are effective single sided ventilated.

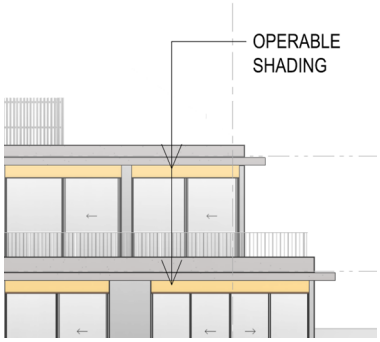
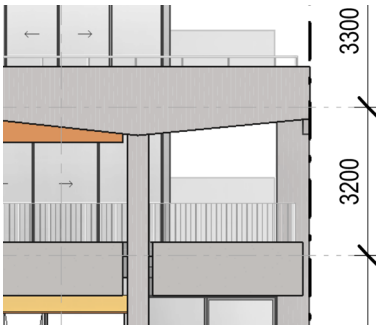
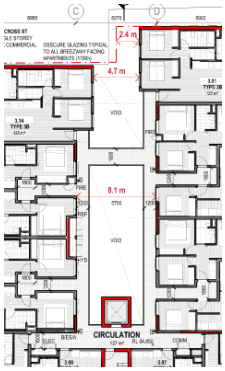


Typical natural cross-ventilated apartment



Typical single sided ventilated apartment

Council Best Practice Standard

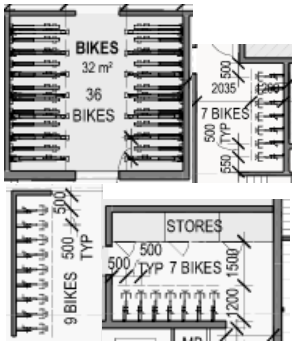
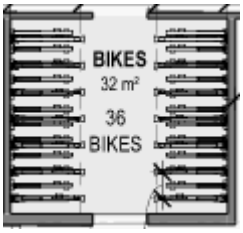
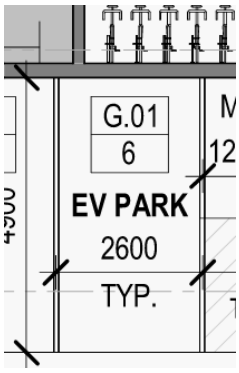
Criteria		Development Provision
Thermal Comfort	To provide comfortable indoor spaces and reduce energy needed for heating and cooling.	The development is provided with a comprehensive shading strategy:  Operable shading is provided to the west oriented windows at L1-4 and east oriented windows at L3-4.  Recessed windows are shaded by the balcony above.  Bedrooms facing into the central courtyard are shaded by the corridor above and / or built form.

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.

Council Best Practice Standard

Criteria		Development Provision	
Bicycle Parking – Residential & Residential Visitors	To encourage and recognise initiatives that facilitate cycling.	 In total 49 bicycle spaces are to be provided for residents. This will provide a ratio of approximately 1 resident bicycle space for every apartment.	 In total 10 bicycle spaces are to be provided for residential visitors. This will provide a ratio of approximately 1 visitor bicycle space for every 5 apartments.
Electric Vehicle Infrastructure	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	One charging point for electrical vehicles is integrated in the proposed development.  Location of electric charging point.	
Car Share Scheme	To minimise car dependency and	Nil.	

Council Best Practice Standard

Criteria		Development Provision
	to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	
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.	The proposed development will incorporate min. 5 motorbike / moped spaces in the basement carpark. This represents ≥5% of the total carparking.

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

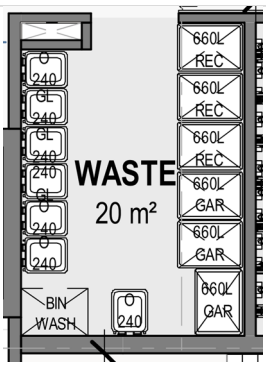
Criteria		Development Provision
Embodied Energy	Limited use of high embodied energy metals and materials, especially in a design with intended high churn (e.g. retail)	The design will seek to limit the use of high embodied energy metal finishes. At least 40% of coarse aggregate in the concrete is crushed 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.

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

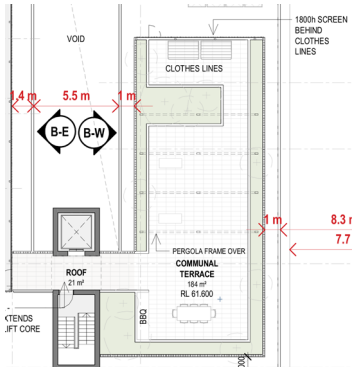
Criteria		Development Provision
Building Re-use	To ensure waste avoidance, reuse and recycling during the design.	None of the existing structure is re-used.
Construction and Demolition Waste	To reduce construction waste going to landfill	At least 90% of the waste generated during construction and demolition 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 ground floor waste room.
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 in the ground floor waste room. Kitchen joinery is to provide appropriate spatial allowance for food and organics, general and recycling waste collection.

Urban Ecology

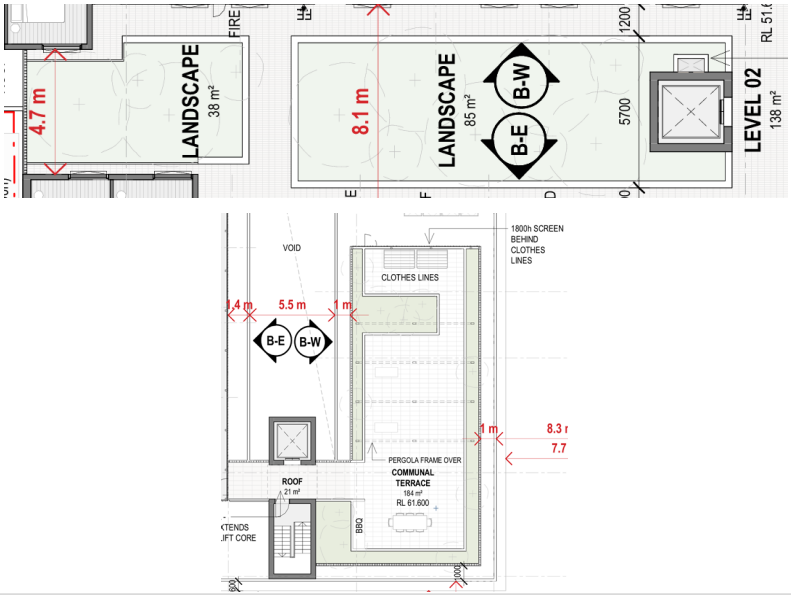
Council ESD objectives:

- 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.

Council Best Practice Standard

Criteria		Development Provision
Communal Space	To encourage and recognise initiatives that facilitate interaction between building occupants.	184m^2 of communal space will be provided on the roof. Communal space will include the following amenities: clotheslines, seating and landscaping.  Communal space will be provided at roof.
Vegetation	To encourage and recognise the use of vegetation and landscaping within and around developments.	Planter boxes are to be located in selected POS, balconies and communal terrace. The total area of vegetation is 20% 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.	A green roof will be provided at level 2 and upper roof. 
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.	The rooftop landscaping incorporates a selection of edible plants, providing residents with the opportunity to enjoy and harvest fresh produce as part of their living environment. Edible plants to be provided are Myer Lemon, Red Centre Lime, Dwarf Bay Tree, Rosemary, Sage and Lemon Thyme.
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.

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
Innovative reduce, reuse, recycle strategy	To educate and encourage residents to minimise materials going to landfill.	A Reduce, Reuse Recycle strategy is included within this Waste Management Plan and the appendix of the Sustainable Management Plan. This strategy outlines State Government and local Council waste ambitions, local reduce, reuse and recycle opportunities, waste minimisation strategies and clear guidance on waste storage sizing within apartment / tenancies and bin storage space. Refer Appendix E – Reduce, Reuse, Recycle Strategy
Bicycle Repair Station	To provide opportunities for repair and reuse	Bicycle Repair Station Inclusion of secure, convenient and accessible equipment including repair stands, pumps and tools for fixing bicycles.
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). It is the intent to maintain this agreement for a minimum of 10 years.
ESD Checkpoint during Construction Phase	To ensure that all ESD items are suitably installed and incorporated during construction.	An ESD professional will be engaged throughout the design and construction process. The ESD professional will perform a minimum of 2 site inspections during the construction phase to ensure suitable implementation of the ESD initiatives. Any deficiencies compared to the endorsed SMP will be escalated to the project manager and resolved. The checkpoint assessments will be undertaken at two stages as follows: • Site Inspection 1: Prior to installation of internal linings. • Site inspection 2: At the time of project completion.

Appendices

Appendix A: WSUD Response

Site layout Plan

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

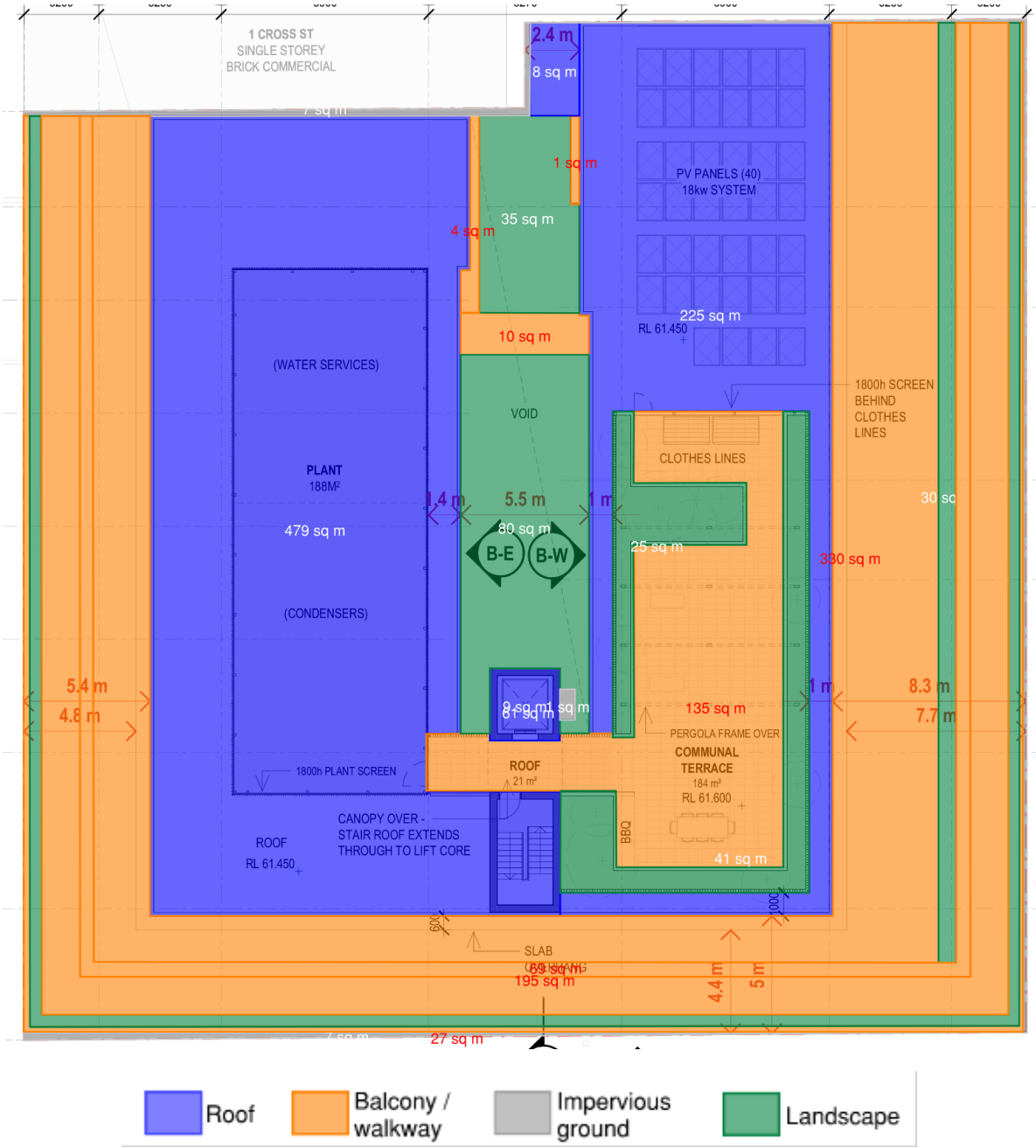


Figure 1 - Mark-up of water catchment and impervious areas

STORM Rating Report

A STORM rating of ≥104% can be achieved by implementing the following initiatives:

- Rainwater is to be collected from the roof and balconies and directed into the 24,000 litre rainwater tank. Ground-Level 2 WC's and landscape irrigation are to be connected to the rainwater tank.

Melbourne Water has developed the Stormwater Treatment Objective- Relative Measure (STORM) Calculator as a method of simplifying the analysis of stormwater treatment methods. The STORM 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 STORM Result is provided below:

Melbourne Water **STORM Rating Report**

TransactionID:	0	
Municipality:	MERRI-BEK	
Rainfall Station:	MORELAND	
Address:	55-57 Albert Street	
	Brunswick East	
	VIC	3057
Assessor:	GIW	
Development Type:	Residential - Multiunit	
Allotment Site (m2):	1,790.00	
STORM Rating %:	104	

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof	721.00	Rainwater Tank	12,000.00	25	127.10	80.30
Balcony/walkway	772.00	Rainwater Tank	12,000.00	25	121.20	81.00
Impervious ground	23.00	None	0.00	0	0.00	0.00
Planter boxes / landscaping	273.00	None	0.00	0	0.00	0.00

WSUD Strategy

The development will include the provision of a 24,000 litre rainwater tank and associated pump in the ground floor garage. The rainwater tank is to be connected to ground-level 2 WC's and landscape irrigation.

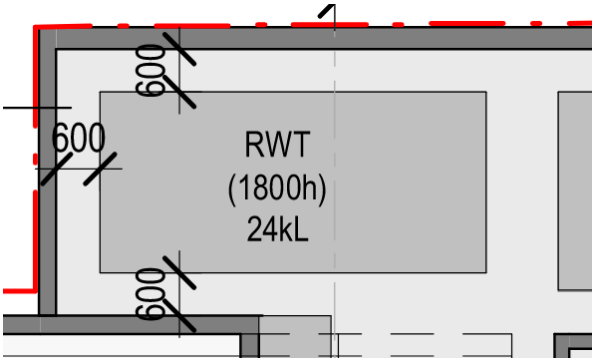


Figure 2 – Location Rainwater Tank

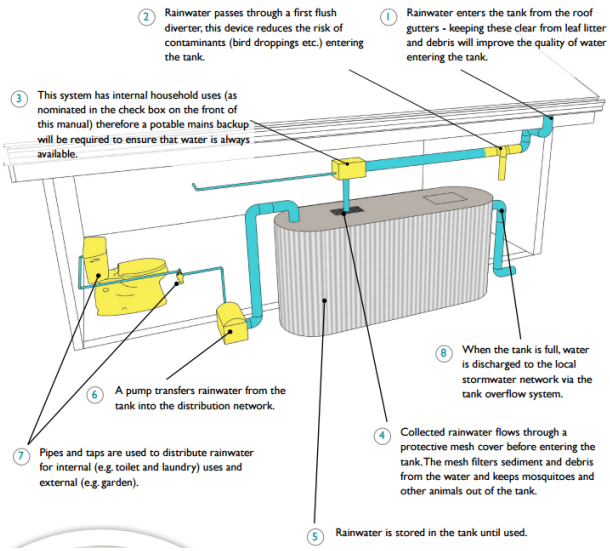


Figure 3 – Cross-section Tank
(City of Port Phillip)

Rainwater Reuse

Inputs

Catchment Area	1493 sqm
Number of Bedrooms	49
Bin Washout	No
Irrigation Area	335 sqm
Tank Capacity	24,000 Litre

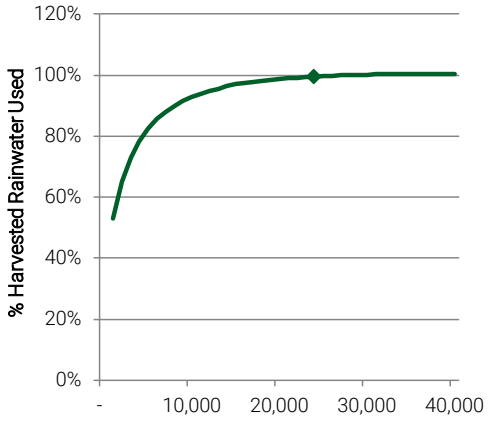
Outputs

% Served by Rainwater	60.9%
% Harvested Rainwater Used	75.5%
Total Potable Water Saved	325,504 Litre

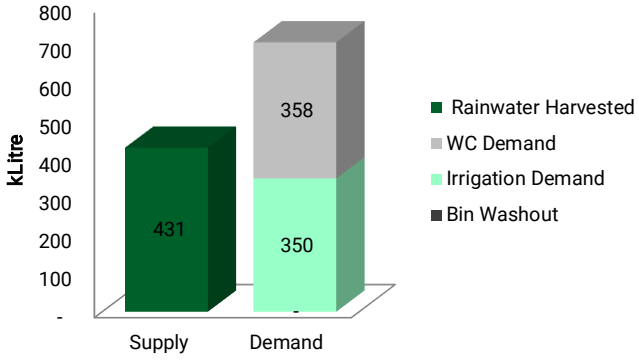
Rainwater Balance (Monthly Averages)

Month	Rainwater Harvested (L)	Irrigation Demand (L)	WC Demand (L)	Bin Washout (L)
Jan	31,142	51,831	30,380	0
Feb	35,689	46,952	27,440	0
Mar	31,762	24,085	30,380	0
Apr	34,166	23,057	29,400	0
May	34,921	23,791	30,380	0
Jun	34,640	10,841	29,400	0
Jul	28,070	11,046	30,380	0
Aug	35,122	11,046	30,380	0
Sep	38,795	31,690	29,400	0
Oct	39,332	32,288	30,380	0
Nov	48,120	31,491	29,400	0
Dec	39,405	52,232	30,380	0
Total	431,164	350,349	357,700	0
Equivalent STORM tool		48		0

Tank Sizing



Supply-Demand



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

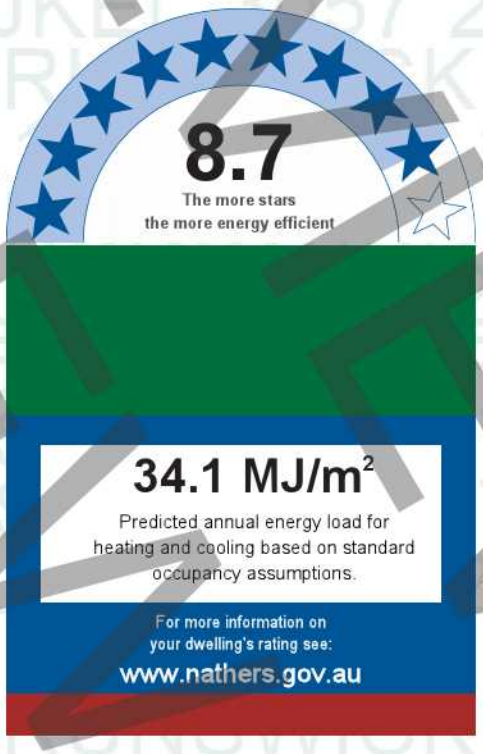
The following maintenance requirements are to be programmed to ensure the rainwater tank operates effectively:

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

Appendix B: Preliminary FirstRate Certificates

Nationwide House Energy Rating Scheme
NatHERS Certificate

Generated on 17 Sep 2025 using FirstRate5: 5.3.2b (3.21)



Property

Address	2.01, 53-57 Albert St, Brunswick East, ACT, 3057
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	Project no. 24-064
Prepared by	09/07/2025

Construction and environment

Assessed floor area (m²)*	
Conditioned*	105.8
Unconditioned*	625.9
Total	731.7
Garage	-

Exposure type
suburban

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
26.3 MJ/m²	7.8 MJ/m²

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

Accredited assessor

Name	Gary Wertheimer
Business name	GIW Environmental Solutions
Email	gary@giw.com.au
Phone	0390445111
Accreditation No.	DMN/10/2024
Assessor Accrediting Organisation	Design Matters National
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit When using either link, ensure you are visiting www.FR5.com.au.

National Construction Code (NCC) requirements

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

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

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

* Refer to glossary.

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional Notes

Load background with snappable points feature did not work, backgroud added as imgae

Insulation to the walls are selected from the specified conductivity list and adjusted the thickness accordingly as there are limitation to select the required Insulation values from the specific conductivity default list

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-052-12 A	Series EC65TB Fixed In Window DG DG 6mmEVanClr-12Ar-6mmClr	2.03	0.47	0.45	0.49
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
AWS-037-130 B	731 Thermal Heart Sliding Door DG 638KlymetShieldLamClr-12Ar-6En- viroClr	2.49	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*
Bedroom 1	THC-052-12 A	Opening 41	1650	1500	fixed	0.0	W	No
Bedroom 1	THC-023-03 B	Opening 42	900	1500	awning	45.0	W	No
Bedroom 2	THC-023-03 B	Opening 35	900	1500	awning	45.0	W	No
Bedroom 2	THC-052-12 A	Opening 40	1650	1500	fixed	0.0	W	No
Master Bedroom	AWS-037-130 B	Opening 33	3000	2856	sliding	45.0	E	No
Living Room	AWS-037-130 B	Opening 32	3000	2222	sliding	45.0	E	No
Living Room	THC-052-12 A	Opening 39	3000	1170	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)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

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

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	GIW24181 - Heavy weight+ Structural wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

* Refer to glossary.

2	GIW24181 - Light Weight Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	Yes
3	GIW24181 - Heavy weight wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared carpark	1	2400	6188	S	0	No
Shared carpark	2	2400	4483	W	0	No
Shared carpark	1	2400	19354	N	0	No
Shared carpark	1	2400	22120	W	0	No
Shared carpark	1	2400	8960	S	0	No
Shared carpark	1	2400	4760	E	0	No
Shared carpark	1	2400	5400	S	0	No
Shared carpark	1	2400	5360	W	0	No
Shared carpark	1	2400	11328	S	0	No
Shared carpark	1	2400	30811	E	0	No
Shared carpark	1	2400	12522	N	0	No
Shared carpark	1	2400	3650	W	0	Yes
Bedroom 1	2	3000	2901	W	0	Yes
Bedroom 1	1	3000	3956	N	0	No
Bathroom 1	1	3000	3573	N	0	No
Bedroom 2	2	3000	1961	S	8061	Yes
Bedroom 2	2	3000	653	W	0	Yes
Bedroom 2	2	3000	2276	W	0	Yes
Entry	2	3000	1173	W	1509	Yes
Entry	3	3000	2017	S	0	No
Ensuite	1	3000	1879	N	0	No
Master WIR	1	3000	2163	N	0	No
Master Bedroom	2	3000	2942	E	3179	Yes
Master Bedroom	1	3000	3756	N	0	No
Living Room	3	3000	2313	S	0	No
Living Room	1	3000	3989	S	0	No
Living Room	3	3000	3406	S	0	No
Living Room	1	3000	840	S	0	No
Living Room	2	3000	4298	E	3195	Yes
Corrider	3	3000	1148	S	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	75.2	

* Refer to glossary.

2	GIW24181 - Internal Wall	46.4

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared carpark	FR5 - 250mm concrete slab	552.3	Enclosed	R0.0	none
Shared carpark	FR5 - 250mm concrete slab	70.7	Enclosed	R0.0	none
Bedroom 1	FR5 - 400mm concrete slab	11.6	Enclosed	R3.6	Timber
Bathroom 1	FR5 - 400mm concrete slab	6.1	Enclosed	R3.6	Tiles
Bedroom 2	FR5 - 400mm concrete slab	9.7	Elevated	R3.6	Timber
Bedroom 2	FR5 - 400mm concrete slab	2	Enclosed	R3.6	Timber
Entry	FR5 - 400mm concrete slab	2.4	Elevated	R3.6	Timber
Ensuite	FR5 - 400mm concrete slab	5.8	Enclosed	R3.6	Tiles
Master WIR	FR5 - 400mm concrete slab	1.5	Enclosed	R3.6	Timber
Master WIR	FR5 - 400mm concrete slab	3.9	Enclosed	R0.0	Timber
Master Bedroom	FR5 - 400mm concrete slab	11.1	Enclosed	R0.0	Timber
Living Room	FR5 - 400mm concrete slab	21.7	Enclosed	R3.6	Timber
Living Room	FR5 - 400mm concrete slab	24.3	Enclosed	R0.0	Timber
Corrider	FR5 - 400mm concrete slab	6.1	Enclosed	R3.6	Timber
Laundry	FR5 - 400mm concrete slab	2.9	Enclosed	R3.6	Tiles

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared carpark	FR5 - 400mm concrete slab	R3.6	No
Shared carpark	Plasterboard	R0.0	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	4	Downlights	80	Sealed
Bathroom 1	3	Downlights	80	Sealed
Bathroom 1	1	Exhaust Fans	250	Sealed
Bedroom 2	4	Downlights	80	Sealed
Entry	2	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	250	Sealed
Master WIR	2	Downlights	80	Sealed
Master Bedroom	4	Downlights	80	Sealed
Living Room	16	Downlights	80	Sealed
Living Room	1	Exhaust Fans	250	Sealed
Corrider	3	Downlights	80	Sealed
Laundry	1	Downlights	80	Sealed
Laundry	1	Exhaust Fans	250	Sealed

* Refer to glossary.

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium

Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

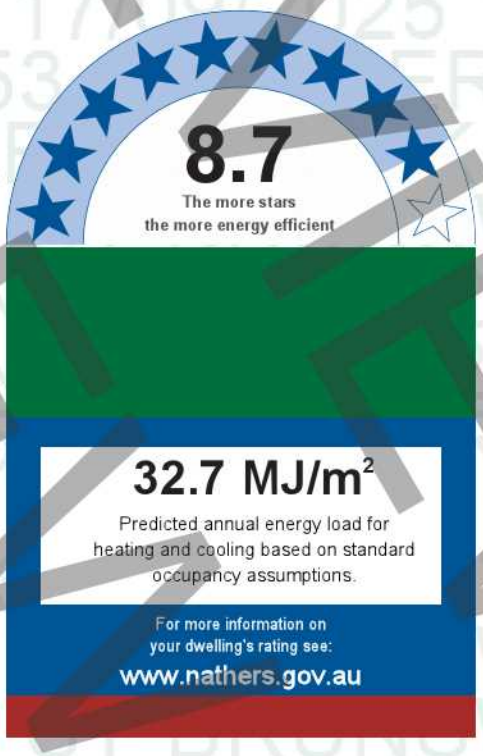
Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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

Nationwide House Energy Rating Scheme
NatHERS Certificate

Generated on 17 Sep 2025 using FirstRate5: 5.3.2b (3.21)



Property

Address	2.12, 53-57 Albert St, Brunswick East, ACT, 3057
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	Project no. 24-064
Prepared by	09/07/2025

Construction and environment

Assessed floor area (m²)*	
Conditioned*	48.6
Unconditioned*	556.8
Total	605.4
Garage	-

Exposure type
suburban

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
18.8 MJ/m²	13.9 MJ/m²

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

Accredited assessor

Name	Gary Wertheimer
Business name	GIW Environmental Solutions
Email	gary@giw.com.au
Phone	0390445111
Accreditation No.	DMN/10/2024
Assessor Accrediting Organisation	Design Matters National
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit When using either link, ensure you are visiting www.FR5.com.au.

National Construction Code (NCC) requirements

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

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

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

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional Notes

Load background with snappable points feature did not work, backgroud added as imgae

Insulation to the walls are selected from the specified conductivity list and adjusted the thickness accordingly as there are limitation to select the required Insulation values from the specific conductivity default list

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-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
AWS-037-130 B	731 Thermal Heart Sliding Door DG 638KlymetShieldLamClr-12Ar-6En- viroClr	2.49	0.45	0.43	0.47
THC-052-12 A	Series EC65TB Fixed In Window DG DG 6mmEVanClr-12Ar-6mmClr	2.03	0.47	0.45	0.49

* Refer to glossary.

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom	THC-023-03 B	Opening 41	900	1500	awning	45.0	E	No
Bedroom	THC-033-07 B	Opening 48	1650	1500	fixed	0.0	E	No
Living room	AWS-037-130 B	Opening 42	2750	2450	sliding	45.0	W	No
Living room	THC-052-12 A	Opening 47	2100	1300	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 (m²)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

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

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	GIW24181 - Heavy weight+ Structural wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

* Refer to glossary.

2	GIW22269 - Brick + Plaster	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7)	No
3	GIW24181 - Light Weight Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	Yes
4	GIW24181 - Heavy weight wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared carpark	1	2400	8880	S	0	No
Shared carpark	1	2400	4760	E	0	No
Shared carpark	1	2400	5400	S	0	No
Shared carpark	1	2400	5360	W	0	No
Shared carpark	2	2400	11440	S	0	No
Shared carpark	1	2400	22720	E	0	No
Shared carpark	3	2400	6840	N	0	No
Shared carpark	1	2400	18920	N	0	No
Shared carpark	1	2400	22120	W	0	No
Bedroom	4	2950	3757	N	1153	Yes
Bedroom	3	2950	581	W	2094	Yes
Bedroom	4	2950	3599	S	0	No
Bedroom	3	2950	2071	E	0	No
Bedroom	3	2950	825	S	0	No
Bedroom	1	2950	1825	E	1565	Yes
Bathroom	4	2950	3079	S	0	No
Entry	3	2950	2006	N	2472	Yes
Living room	4	2950	2433	S	0	No
Living room	1	2950	3754	S	0	No
Living room	3	2950	1164	E	1961	Yes
Living room	1	2950	2591	N	0	No
Living room	4	2950	3080	N	0	No
Living room	1	2950	2291	N	0	No
Living room	3	2950	4490	W	3100	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	29	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared carpark	FR5 - 250mm concrete slab	34.1	Enclosed	R0.0	none

* Refer to glossary.

Shared carpark	FR5 - 250mm concrete slab	516.5	Enclosed	R0.0	none
Bedroom	FR5 - 400mm concrete slab	14.2	Enclosed	R3.6	Timber
Bathroom	FR5 - 400mm concrete slab	6.2	Enclosed	R3.6	Tiles
Entry	FR5 - 400mm concrete slab	2.4	Enclosed	R3.6	Timber
Living room	FR5 - 400mm concrete slab	7.4	Enclosed	R3.6	Timber

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared carpark	FR5 - 400mm concrete slab	R3.6	No
Shared carpark	FR5 - 400mm concrete slab	R0.0	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom	5	Downlights	80	Sealed
Bathroom	2	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	250	Sealed
Entry	2	Downlights	80	Sealed
Living room	13	Downlights	80	Sealed
Living room	1	Exhaust Fans	250	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium

* Refer to glossary.

Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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

Nationwide House Energy Rating Scheme
NatHERS Certificate

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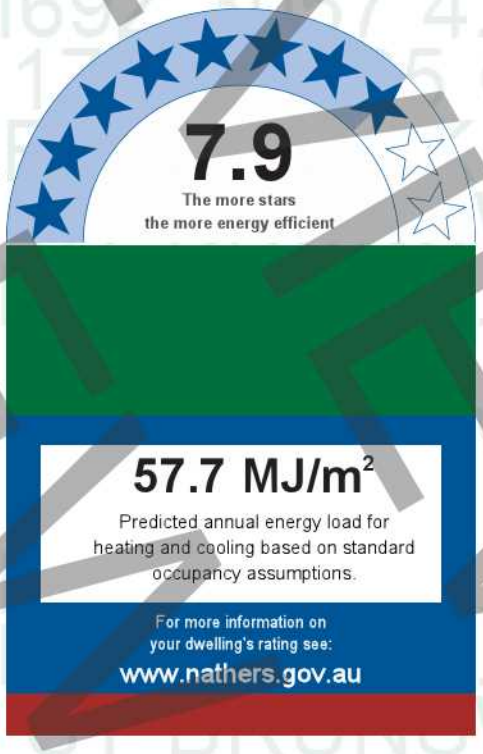

Property

Address	4.06, 53-57 Albert St, Brunswick East, ACT, 3057
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	Project no. 24-064
Prepared by	09/07/2025

Construction and environment

Assessed floor area (m²)*	
Conditioned*	97.7
Unconditioned*	3.8
Total	101.5
Garage	-

Exposure type
exposed

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
44.1 MJ/m²	13.6 MJ/m²

About the rating
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Accredited assessor

Name	Gary Wertheimer
Business name	GIW Environmental Solutions
Email	gary@giw.com.au
Phone	0390445111
Accreditation No.	DMN/10/2024
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Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

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Additional Notes

Load background with snappable points feature did not work, backgroud added as imgae

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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-052-12 A	Series EC65TB Fixed In Window DG DG 6mmEVanClr-12Ar-6mmClr	2.03	0.47	0.45	0.49
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
AWS-037-130 B	731 Thermal Heart Sliding Door DG 638KlymetShieldLamClr-12Ar-6En- viroClr	2.49	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*
Bedroom 1	THC-052-12 A	Opening 81	1700	1374	fixed	0.0	E	No
Bedroom 1	THC-023-03 B	Opening 82	950	1252	awning	45.0	E	No
Master bedroom	AWS-037-130 B	Opening 70	2700	2992	sliding	45.0	W	Yes
Bedroom 2	THC-023-03 B	Opening 79	950	1500	awning	45.0	E	No
Bedroom 2	THC-052-12 A	Opening 80	1700	1500	fixed	0.0	E	No
Kitchen/Living	AWS-037-130 B	Opening 78	2700	5470	sliding	45.0	W	Yes

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)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
ENtry passage	2100	950	100.0	E

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	GIW24181 - Heavy weight wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

* Refer to glossary.

2	GIW24181 - Heavy weight+ Structural wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
3	GIW24181 - Heavy weight wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	Yes
4	GIW24181 - Light Weight Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	1	3000	3615	S	0	No
Bedroom 1	2	3000	2041	E	0	No
Bedroom 1	3	3000	725	S	0	No
Bedroom 1	4	3000	1471	E	1551	Yes
Bathroom 1	1	3000	1503	S	0	No
Master Bathroom	2	3000	606	S	0	No
Master Bathroom	1	3000	1248	S	0	No
Master bedroom	1	3000	2180	S	0	No
Master bedroom	2	3000	1089	S	0	No
Master bedroom	4	3000	3633	W	661	Yes
Bedroom 2	4	3000	3682	E	1548	Yes
ENtry passage	4	3000	1850	E	1528	Yes
ENtry passage	1	3000	2999	N	0	No
Kitchen/Living	1	3000	5068	N	0	No
Kitchen/Living	2	3000	1084	N	0	No
Kitchen/Living	1	3000	2181	N	0	No
Kitchen/Living	4	3000	5629	W	659	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	95.4	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	FR5 - 250mm concrete slab	13.3	Enclosed	R0.0	Timber
Bathroom 1	FR5 - 250mm concrete slab	3.8	Enclosed	R0.0	Tiles
Master Bathroom	FR5 - 250mm concrete slab	5.6	Enclosed	R0.0	Tiles
Master bedroom	FR5 - 250mm concrete slab	11.9	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 250mm concrete slab	10.9	Enclosed	R0.0	Timber
ENtry passage	FR5 - 250mm concrete slab	5.5	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 250mm concrete slab	48.5	Enclosed	R0.0	Timber
Passage	FR5 - 250mm concrete slab	2.1	Enclosed	R0.0	Timber

* Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	R5.0	No
Bathroom 1	Plasterboard	R5.0	No
Master Bathroom	Plasterboard	R5.0	No
Master bedroom	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No
ENtry passage	Plasterboard	R5.0	No
Kitchen/Living	Plasterboard	R5.0	No
Passage	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	5	Downlights	80	Sealed
Bathroom 1	2	Downlights	80	Sealed
Bathroom 1	1	Exhaust Fans	250	Sealed
Master Bathroom	3	Downlights	80	Sealed
Master Bathroom	1	Exhaust Fans	250	Sealed
Master bedroom	4	Downlights	80	Sealed
Bedroom 2	4	Downlights	80	Sealed
ENtry passage	2	Downlights	80	Sealed
Kitchen/Living	20	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 225mm: 225mm Suspended Slab	0.0	0.5	Medium

* Refer to glossary.

Explanatory Notes

About this report

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

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

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

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening Percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
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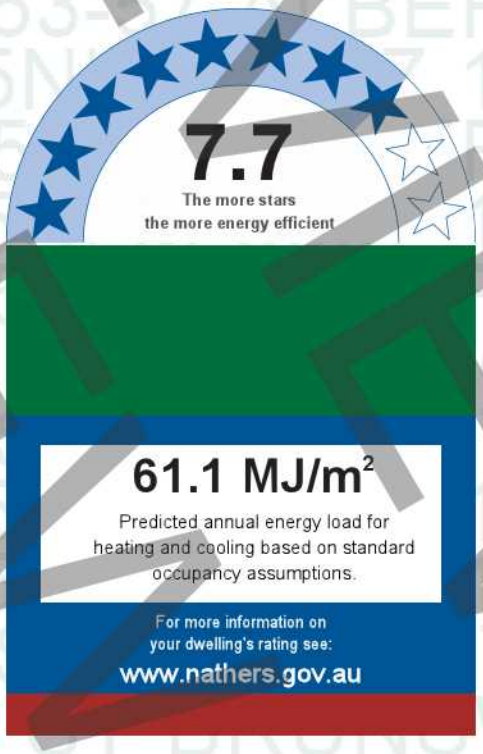
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

Nationwide House Energy Rating Scheme
NatHERS Certificate

Generated on 17 Sep 2025 using FirstRate5: 5.3.2b (3.21)



Property

Address	1.03, 53-57 Albert St, Brunswick East, ACT, 3057
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	Project no. 24-064
Prepared by	09/07/2025

Construction and environment

Assessed floor area (m²)*	
Conditioned*	78.2
Unconditioned*	2.6
Total	80.8
Garage	-

Exposure type
suburban

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
53.4 MJ/m²	7.7 MJ/m²

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

Accredited assessor

Name	Gary Wertheimer
Business name	GIW Environmental Solutions
Email	gary@giw.com.au
Phone	0390445111
Accreditation No.	DMN/10/2024
Assessor Accrediting Organisation	Design Matters National
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit When using either link, ensure you are visiting www.FR5.com.au.

National Construction Code (NCC) requirements

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

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

Certificate Check

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

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional Notes

Load background with snappable points feature did not work, backgroud added as imgae

Insulation to the walls are selected from the specified conductivity list and adjusted the thickness accordingly as there are limitation to select the required Insulation values from the specific conductivity default list

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
AWS-037-130 B	731 Thermal Heart Sliding Door DG 638KlymetShieldLamClr-12Ar-6En- viroClr	2.49	0.45	0.43	0.47
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-052-12 A	Series EC65TB Fixed In Window DG DG 6mmEVanClr-12Ar-6mmClr	2.03	0.47	0.45	0.49

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
M Bedroom	AWS-037-130 B	Opening 33	3000	2000	sliding	45.0	S	No
Bedroom 1	THC-023-03 B	Opening 36	3000	1560	awning	66.0	S	No
Kitchen/Living	THC-052-12 A	Opening 34	3600	1700	fixed	0.0	S	No
Kitchen/Living	AWS-037-130 B	Opening 35	3600	3500	sliding	45.0	S	No

Roof window *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Area (m²)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

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

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	GIW24181 - Heavy weight wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	GIW24181 - Light Weight Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	Yes

* Refer to glossary.

3	GIW24181 - Heavy weight+ Structural wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Ensuite	1	4275	1811	N	0	No
Ensuite	1	4275	3382	W	0	No
M Bedroom	2	4275	4088	S	2101	Yes
M Bedroom	2	4275	1731	N	0	No
M Bedroom	3	4275	4407	W	0	No
Bedroom 1	2	4275	2911	S	2082	Yes
Bedroom 1	3	4275	2793	E	0	No
Bedroom 1	3	4275	1308	N	0	No
Bedroom 1	3	4275	625	E	0	No
Bathroom	3	4275	2455	E	0	No
Laundry	3	4275	1584	E	0	No
Laundry	1	4275	1641	N	0	No
Kitchen/Living	2	4275	5206	S	2162	Yes
Kitchen/Living	1	4275	5606	N	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	88.8	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Ensuite	FR5 - 225mm concrete slab	7.2	Enclosed	R0.0	Tiles
M Bedroom	FR5 - 225mm concrete slab	13.4	Enclosed	R0.0	Timber
M Bedroom	FR5 - 225mm concrete slab	2.7	Enclosed	R0.0	Timber
Bedroom 1	FR5 - 225mm concrete slab	4.1	Enclosed	R0.0	Timber
Bedroom 1	FR5 - 225mm concrete slab	3.1	Elevated	R3.6	Timber
Bedroom 1	FR5 - 225mm concrete slab	1.9	Elevated	R3.6	Timber
Bathroom	FR5 - 225mm concrete slab	3.8	Enclosed	R0.0	Tiles
Laundry	FR5 - 225mm concrete slab	2.6	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 225mm concrete slab	1.6	Elevated	R3.6	Timber
Kitchen/Living	FR5 - 225mm concrete slab	37	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 225mm concrete slab	2.3	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 225mm concrete slab	0.9	Elevated	R3.6	Timber

Ceiling *type*

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
M Bedroom	Plasterboard	R3.6	No
Bedroom 1	Plasterboard	R3.6	No
Kitchen/Living	Plasterboard	R3.6	No
Kitchen/Living	Plasterboard	R3.6	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Ensuite	3	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	250	Sealed
M Bedroom	5	Downlights	80	Sealed
Bedroom 1	4	Downlights	80	Sealed
Bathroom	2	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	250	Sealed
Laundry	1	Downlights	80	Sealed
Laundry	1	Exhaust Fans	250	Sealed
Kitchen/Living	16	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 225mm: 225mm Suspended Slab	0.0	0.5	Medium

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Explanatory Notes

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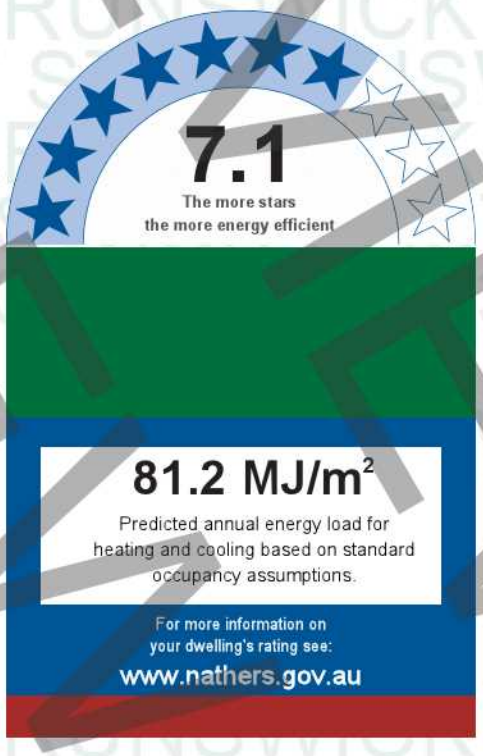

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Lot/DP	-
NCC Class*	Class 2
Type	New Home

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Main plan	Project no. 24-064
Prepared by	09/07/2025

Construction and environment

Assessed floor area (m²)*	
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Unconditioned*	4.6
Total	72.8
Garage	-

Exposure type
exposed

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
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Business name	GIW Environmental Solutions
Email	gary@giw.com.au
Phone	0390445111
Accreditation No.	DMN/10/2024
Assessor Accrediting Organisation	Design Matters National
Declaration of interest	Declaration completed: no conflicts

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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	
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THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
AWS-037-130 B	731 Thermal Heart Sliding Door DG 638KlymetShieldLamClr-12Ar-6En- viroClr	2.49	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*

* Refer to glossary.

M Bedroom	THC-023-03 B	Opening 59	2800	1410	awning	90.0	W	Yes
Bedroom 1	AWS-037-130 B	Opening 63	2800	1810	awning	45.0	S	No
Kitchen/Living	AWS-037-130 B	Opening 61	3000	3750	sliding	45.0	S	No
Kitchen/Living	AWS-037-130 B	Opening 60	3000	3200	sliding	45.0	W	Yes

Roof window *type and performance value*

Default* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
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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)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
entry passage	2100	900	100.0	E

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	GIW24181 - Heavy weight+ Structural wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	GIW24181 - Light Weight Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	Yes
3	GIW24181 - Heavy weight wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
M Bedroom	1	3000	3837	N	0	No
M Bedroom	2	3000	3003	W	726	Yes
Ensuite	3	3000	1031	N	0	No
Ensuite	1	3000	929	N	0	No
Bathroom	3	3000	1533	N	0	No
Bedroom 1	2	3000	2993	S	823	Yes
Bedroom 1	1	3000	3441	E	0	No
entry passage	3	3000	1393	N	0	No
entry passage	1	3000	710	E	0	No
entry passage	3	3000	221	S	0	No
entry passage	3	3000	2715	E	0	No
entry passage	2	3000	1512	E	6129	Yes
Kitchen/Living	2	3000	5752	S	808	Yes
Kitchen/Living	2	3000	5380	W	698	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	78.9	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
M Bedroom	FR5 - 250mm concrete slab	5.1	Enclosed	R0.0	Timber
M Bedroom	FR5 - 250mm concrete slab	6.3	Enclosed	R0.0	Timber
Ensuite	FR5 - 250mm concrete slab	5.8	Enclosed	R0.0	Tiles
Bathroom	FR5 - 250mm concrete slab	4.6	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 250mm concrete slab	4.6	Enclosed	R0.0	Timber
Bedroom 1	FR5 - 250mm concrete slab	5	Enclosed	R0.0	Timber
Bedroom entry	FR5 - 250mm concrete slab	1.3	Enclosed	R0.0	Timber
entry passage	FR5 - 250mm concrete slab	9.2	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 250mm concrete slab	13.5	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 250mm concrete slab	17.5	Enclosed	R0.0	Timber

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
M Bedroom	Plasterboard	R3.6	No
Bedroom 1	Plasterboard	R3.6	No
Kitchen/Living	Plasterboard	R3.6	No

Ceiling *penetrations**

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
M Bedroom	4	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	250	Sealed
Bathroom	2	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	250	Sealed
Bedroom 1	4	Downlights	80	Sealed
entry passage	4	Downlights	80	Sealed
Kitchen/Living	12	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium

Explanatory Notes

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

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Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
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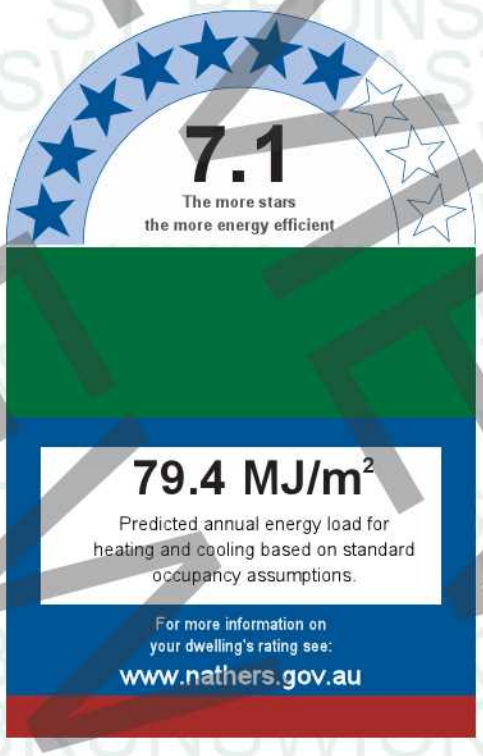
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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

Nationwide House Energy Rating Scheme
NatHERS Certificate

Generated on 17 Sep 2025 using FirstRate5: 5.3.2b (3.21)



Property

Address	G.01, 53-57 Albert St, Brunswick East, ACT, 3057
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	Project no. 24-064
Prepared by	09/07/2025

Construction and environment

Assessed floor area (m²)*	
Conditioned*	123.8
Unconditioned*	1081.8
Total	1205.6
Garage	-

Exposure type
suburban

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
59.8 MJ/m²	19.6 MJ/m²

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

Accredited assessor

Name	Gary Wertheimer
Business name	GIW Environmental Solutions
Email	gary@giw.com.au
Phone	0390445111
Accreditation No.	DMN/10/2024
Assessor Accrediting Organisation	Design Matters National
Declaration of interest	Declaration completed: no conflicts

Verification

To verify this certificate, scan the QR code or visit When using either link, ensure you are visiting www.FR5.com.au.

National Construction Code (NCC) requirements

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

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

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

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional Notes

Load background with snappable points feature did not work, backgroud added as imgae

Insulation to the walls are selected from the specified conductivity list and adjusted the thickness accordingly as there are limitation to select the required Insulation values from the specific conductivity default list

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-052-12 A	Series EC65TB Fixed In Window DG DG 6mmEVanClr-12Ar-6mmClr	2.03	0.47	0.45	0.49
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
AWS-037-130 B	731 Thermal Heart Sliding Door DG 638KlymetShieldLamClr-12Ar-6En- viroClr	2.49	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	THC-052-12 A	Opening 37	3200	3815	fixed	0.0	E	Yes
Kitchen/Living	THC-023-03 B	Opening 41	3400	1500	awning	65.0	N	No
Kitchen/Living	AWS-037-130 B	Opening 35	3400	3687	sliding	45.0	E	No
Kitchen/Living	THC-052-12 A	Opening 36	3400	631	fixed	0.0	E	No
M Bedroom	AWS-037-130 B	Opening 40	2700	3512	sliding	45.0	E	No
Bedroom 2	AWS-037-130 B	Opening 39	2700	2911	sliding	45.0	E	No
Double 14	THC-052-12 A	Opening 38	2700	3812	fixed	0.0	E	Yes
Double 14	THC-052-12 A	Opening 42	2700	1500	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)	Orientation	Outdoor shade	Indoor shade
No Data Available							

Skylight *type and performance*

Skylight ID	Skylight description
No Data Available	

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2900	1000	100.0	E

External wall *type*

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

1	GIW24181 - Heavy weight+ Structural wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	GIW24181 - Heavy weight wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
3	GIW24181 - Light Weight Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Stairs	1	3575	2122	N	0	Yes
Stairs	2	3575	4171	W	0	No
Passage 1	2	3575	1921	S	0	No
Kitchen/Living	2	3575	2556	S	0	No
Kitchen/Living	1	3575	751	S	0	No
Kitchen/Living	1	3575	2431	S	7132	Yes
Kitchen/Living	3	3575	4171	E	0	Yes
Kitchen/Living	3	3575	2522	N	7729	Yes
Kitchen/Living	3	3575	6131	E	2960	Yes
Kitchen/Living	3	3575	1457	E	640	Yes
Kitchen/Living	1	3575	3025	N	0	Yes
Shared car park G	1	2400	13698	E	0	No
Shared car park G	1	2400	5514	N	0	No
Shared car park G	1	2400	3941	W	0	No
Shared car park G	1	2400	4639	N	0	No
Shared car park G	3	2400	4104	E	0	No
Shared car park G	1	2400	2729	N	0	No
Shared car park G	1	2400	12959	N	0	Yes
Shared car park G	1	2400	21490	W	0	No
Shared car park G	3	2400	25769	S	0	No
Stairs L1	1	4275	1141	N	0	Yes
M Bedroom	3	4275	3897	E	2293	Yes
M Bedroom	1	4275	2979	N	0	Yes
Ensuite	1	4275	1460	N	0	Yes
Bedroom 2	3	4275	3513	E	2334	Yes
Bedroom 2	1	4275	4077	S	0	No
Bathroom	1	4275	1779	S	0	No
Double 14	1	4275	1720	S	7136	Yes
Double 14	3	4275	4207	E	349	Yes
Double 14	3	4275	1749	N	7371	Yes
Shared Carpark L1	3	2400	25760	S	0	No
Shared Carpark L1	1	2400	13686	E	0	No

* Refer to glossary.

Shared Carpark L1	1	2400	12600	N	0	No
Shared Carpark L1	1	2400	3600	W	0	Yes
Shared Carpark L1	1	2400	6400	S	0	No
Shared Carpark L1	3	2400	4520	W	0	No
Shared Carpark L1	1	2400	13680	N	0	No
Shared Carpark L1	3	2400	4200	E	0	No
Shared Carpark L1	1	2400	5880	N	0	Yes
Shared Carpark L1	1	2400	21560	W	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	197.7	
2	GIW24181 - Heavy weight+ Structural wall	17.6	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)
3	GIW24181 - Heavy weight wall	27.5	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Stairs	FR5 - 250mm concrete slab	6.8	Enclosed	R3.4	Timber
Powder	FR5 - 250mm concrete slab	7	Enclosed	R3.4	Tiles
Passage 1	FR5 - 250mm concrete slab	3.7	Enclosed	R3.4	Timber
Kitchen/Living	FR5 - 250mm concrete slab	53	Enclosed	R3.4	Timber
Shared car park G	FR5 - CSOG: Slab on Ground	533.5	Enclosed	R3.6	none
Stairs L1	FR5 - 250mm concrete slab	6.2	Enclosed	R0.0	Timber
Passage bedroom	FR5 - 250mm concrete slab	4.4	Enclosed	R0.0	Timber
M Bedroom	FR5 - 250mm concrete slab	1.6	Elevated	R3.6	Timber
M Bedroom	FR5 - 250mm concrete slab	10	Enclosed	R0.0	Timber
Ensuite	FR5 - 250mm concrete slab	3.5	Enclosed	R0.0	Tiles
Bedroom 2	FR5 - 250mm concrete slab	1.5	Elevated	R3.6	Timber
Bedroom 2	FR5 - 250mm concrete slab	9.3	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 250mm concrete slab	2.6	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 250mm concrete slab	13.4	Enclosed	R0.0	Timber
Bathroom	FR5 - 250mm concrete slab	7.1	Enclosed	R0.0	Tiles
Passage 2	FR5 - 250mm concrete slab	5.5	Enclosed	R0.0	Timber
Double 14	No Floor	7.2	Enclosed	R0.0	No Floor
Shared Carpark L1	FR5 - 250mm concrete slab	20.6	Enclosed	R3.6	none
Shared Carpark L1	FR5 - 250mm concrete slab	472.2	Enclosed	R0.0	none

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Stairs	FR5 - 250mm concrete slab	R0.0	No
Powder	FR5 - 250mm concrete slab	R0.0	No

* Refer to glossary.

Passage 1	FR5 - 250mm concrete slab	R0.0	No
Kitchen/Living	FR5 - 250mm concrete slab	R0.0	No
Kitchen/Living	FR5 - 250mm concrete slab	R3.6	No
Shared car park G	FR5 - 250mm concrete slab	R3.6	No
Shared car park G	FR5 - 250mm concrete slab	R0.0	No
Shared car park G	Plasterboard	R0.0	No
M Bedroom	Plasterboard	R3.6	No
Bedroom 2	Plasterboard	R3.6	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Powder	3	Downlights	80	Sealed
Powder	1	Exhaust Fans	250	Sealed
Passage 1	1	Downlights	80	Sealed
Kitchen/Living	23	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	250	Sealed
Passage bedroom	2	Downlights	80	Sealed
M Bedroom	6	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	250	Sealed
Bedroom 2	4	Downlights	80	Sealed
Bedroom 2	4	Downlights	80	Sealed
Bathroom	4	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	250	Sealed
Passage 2	2	Downlights	80	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium

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Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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

Appendix C: Renewable Energy

Inputs Solar PV

Peak Wattage of System	18.0	kWp
Azimuth	0	degrees
Inclination	10	degrees

Outputs Solar PV

Electricity Produced per Year	24123	kWh
No. Panels Required	72	
Total Roof Area Required	132	sqm
Annual Carbon Savings	27017	kg CO2

Economic Output

Cost of System	27000.0	$
Annual Savings	4825	$
Simple Payback	5.6	Years

Appendix D: Daylight Modelling

Scope of Modelling

We have undertaken daylight modelling for 9 apartments assessing both living and bedroom areas. Apartment G.09, 1.03, 2.05, 2.12, 2.14, 3.02, 3.03, 3.04 and 3.13 have been selected with consideration of internal layout, inherent and adjacent building shading features. These apartments reflect an average scenario.

The development has been modelled with the following adjacent developments in place:

- 1 Cross St: an equitable development rights building with the same height and setbacks as the proposed development.
- 59 Albert St: existing residence
- 92 Albert St: existing development
- Fleming Park to the east

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.

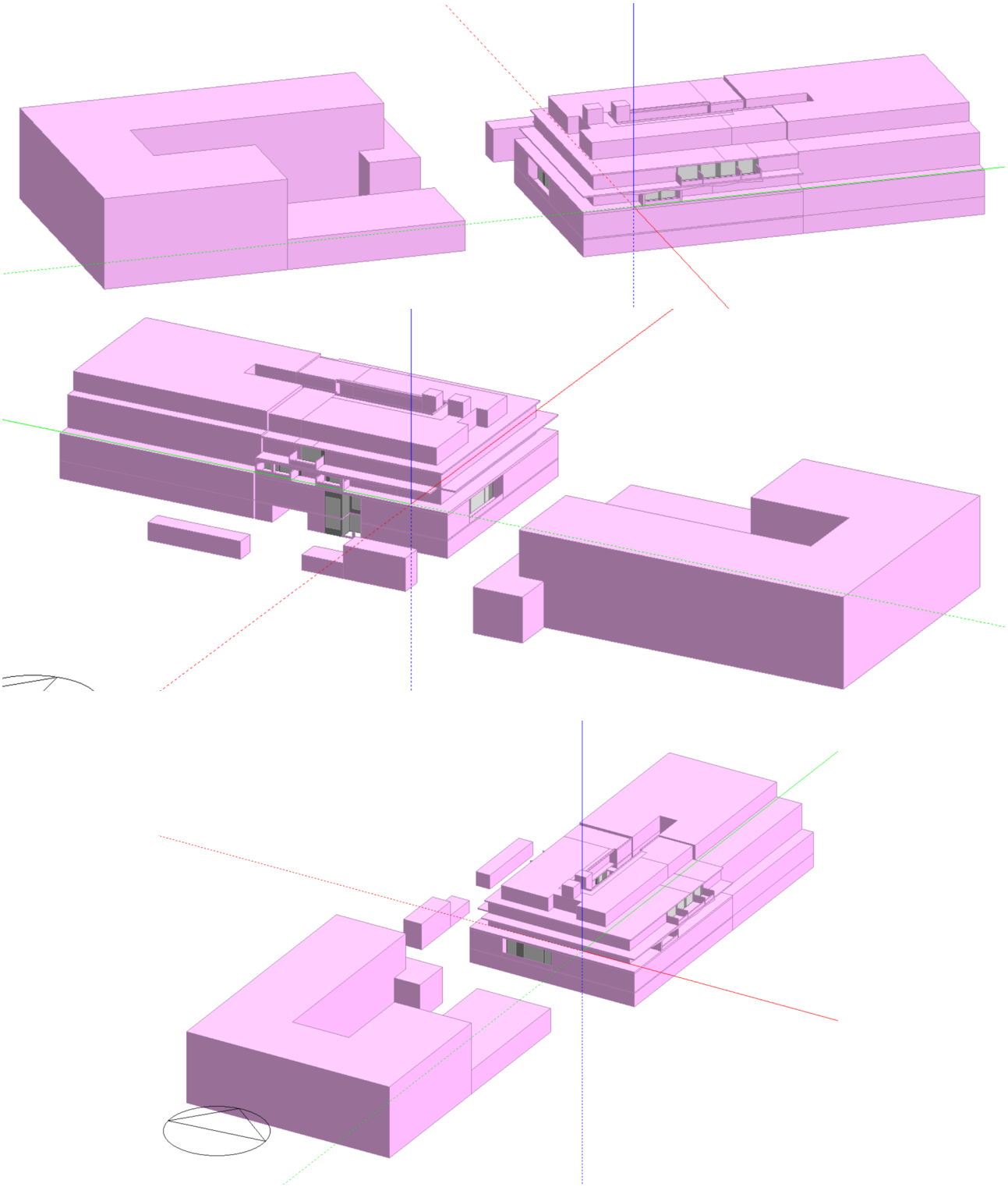


Figure 3 – DesignBuilder model of proposed and adjacent equitable development right buildings

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:
  - Windows: double glazed, low-e, clear window with a total system VLT of 0.68.
- The reflectance of all materials is in accordance with the below:
  - Floors: 0.52
  - Internal Walls: 0.8
  - Ceilings: 0.85
  - Balcony soffit / floor finish: 0.5
  - Privacy screens: 0.5
- 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 53-57 Albert Street, Brunswick East can be summarised as follows:

Area	Floor Area (m2)	Floor Area above DF1 (m2)	% of floor area above DF1	Status
G.09 Living	30.13	30.13	100.00	Compliant
1.03 Living	35.30	35.30	100.00	Compliant
2.05 Living	24.76	22.32	90.13	Compliant
2.12 Living	25.82	24.39	94.47	Compliant
2.14 Living	35.87	17.96	50.06	Non-compliant
3.02 Living	27.73	27.73	100.00	Compliant
3.03 Living	27.47	27.47	100.00	Compliant
3.04 Living	28.05	28.05	100.00	Compliant
3.13 Living	26.10	26.10	100.00	Compliant

The daylight results for bedrooms of 53-57 Albert Street, Brunswick East can be summarised as follows:

Area	Floor Area (m2)	Floor Area above DF0.5 (m2)	% of floor area above DF0.5	Status
G.09 Bed 1	10.3	10.3	100.0	Compliant
G.09 Bed 2	9.2	9.2	100.0	Compliant
1.03 Bed 1	12.4	12.4	100.0	Compliant
1.03 Bed 2	8.6	8.6	100.0	Compliant
2.05 Bed 1	10.0	10.0	100.0	Compliant
2.05 Bed 2	9.3	0.0	0.0	Non-compliant
2.12 Bed 1	12.5	1.9	15.1	Non-compliant
2.14 Bed 1	11.7	11.7	100.0	Compliant
2.14 Bed 2	9.6	9.6	99.5	Compliant
2.14 Bed 3	9.8	4.7	48.2	Non-compliant
3.02 Bed 1	10.6	7.8	73.4	Non-compliant
3.02 Bed 2	8.9	7.8	86.8	Non-compliant
3.03 Bed 1	10.2	10.2	100.0	Compliant
3.03 Bed 2	9.9	9.2	93.0	Compliant
3.04 Bed 1	10.9	10.8	99.3	Compliant
3.04 Bed 2	8.8	8.3	94.2	Compliant
3.13 Bed 1	12.2	10.9	89.0	Non-compliant

Daylight Results – Visual

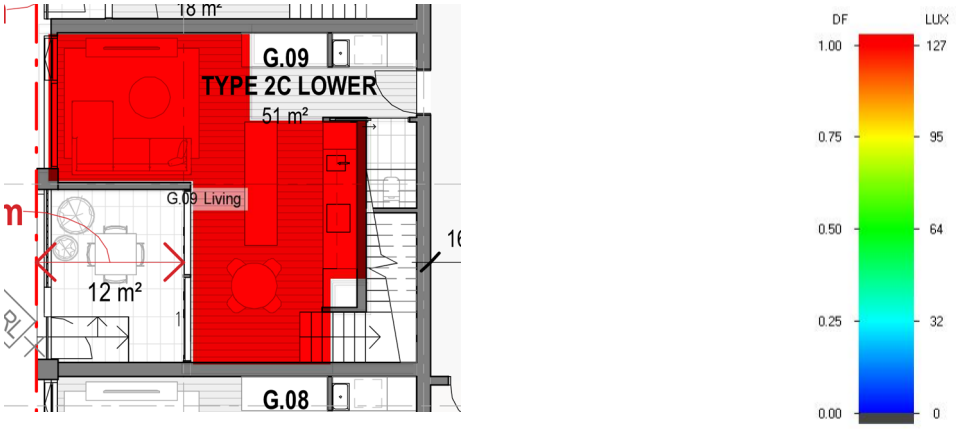


Figure 4 - Daylight Map – GF

Figure 5 - Daylight Map – L1

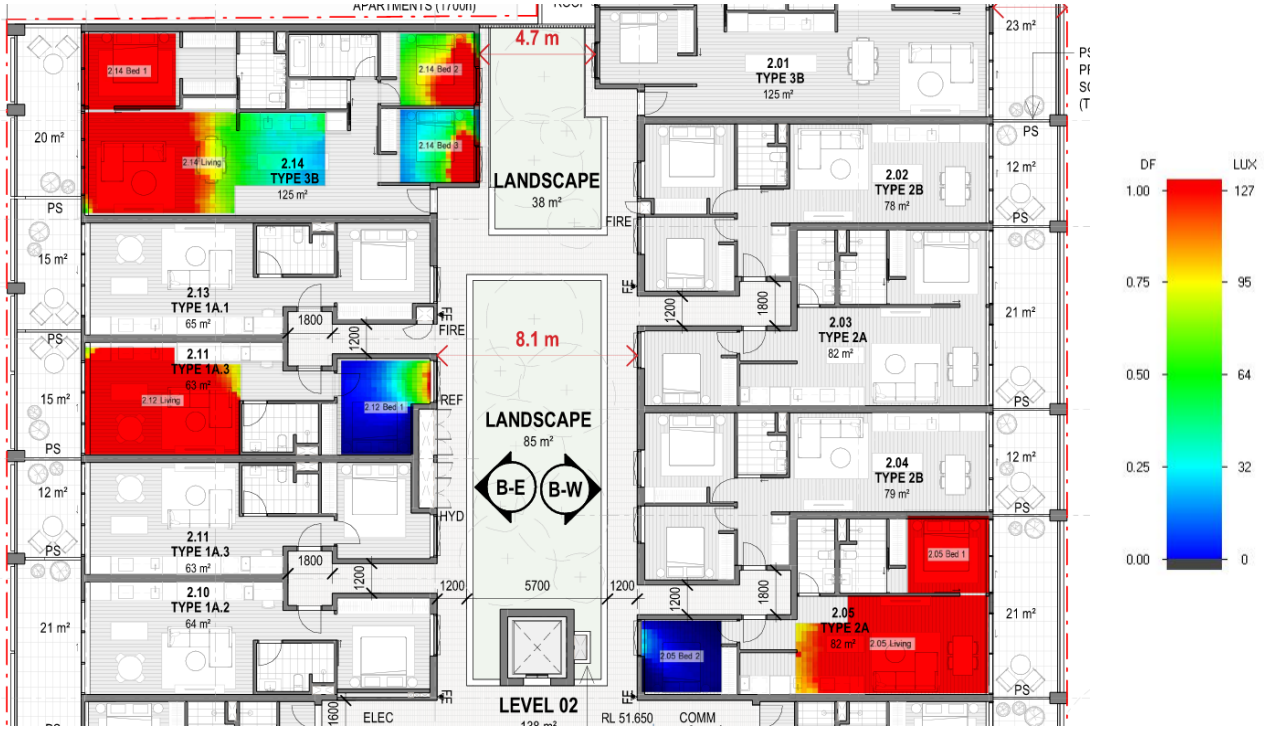


Figure 6 - Daylight Map – L2

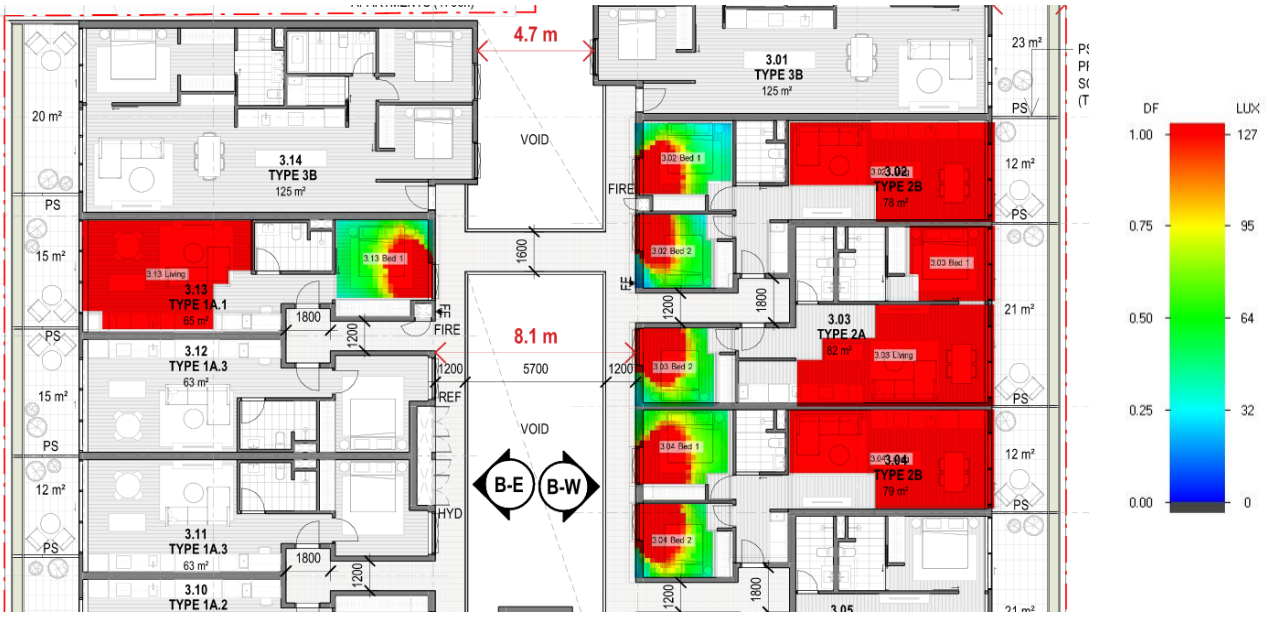


Figure 7 - Daylight Map – L3

Overall Building Results

Apartment No.	Total Living Areas	Living Areas Compliant	Total Bedrooms	Bedrooms Compliant
G.01	1	1	3	3
G.02	1	1	3	3
G.03	1	1	3	3
G.04	1	1	1	1
G.05	1	1	1	1
G.06	1	1	1	1
G.07	1	1	1	1
G.08	1	1	2	2
G.09	1	1	2	2
G.10	1	1	2	2
1.01	1	1	1	1
1.02	1	1	2	2
1.03	1	1	2	2
1.04	1	1	1	1
2.01	1	0	3	3
2.02	1	1	2	0
2.03	1	1	2	1
2.04	1	1	2	0
2.05	1	1	2	1
2.06	1	1	2	2
2.07	1	1	1	1
2.08	1	1	1	1
2.09	1	1	2	2
2.10	1	1	1	0
2.11	1	1	1	0
2.12	1	1	1	0
2.13	1	1	1	0
2.14	1	0	3	2
3.01	1	0	3	3
3.02	1	1	2	0

3.03	1	1	2	2
3.04	1	1	2	2
3.05	1	1	2	1
3.06	1	1	2	2
3.07	1	1	1	1
3.08	1	1	1	1
3.09	1	1	2	2
3.10	1	1	1	0
3.11	1	1	1	1
3.12	1	1	1	1
3.13	1	1	1	0
3.14	1	0	3	3
4.01	1	1	3	3
4.02	1	1	3	3
4.03	1	1	3	3
4.04	1	1	2	2
4.05	1	1	3	3
4.06	1	1	3	3
4.07	1	1	3	3
TOTAL	49	45	93	77
Percentage	92%		83%	

Conclusion

The development has been assessed and it has been determined that 92% of living areas and 83% of bedrooms will achieve the daylight factors as prescribed under BESS and therefore the development will meet the BESS IEQ guidelines for daylight.

Appendix E: Reduce, Reuse, Recycle Strategy

REDUCE Strategies

Food Waste Prevention

Building-Level Initiatives:

- Allow for occupants to grow herbs, vegetables, fruits within the communal landscaped areas and provide options for composting and / or green waste collection.
- Provide residents with food waste caddies to appropriately dispose of food waste.
- Display seasonal produce guides and meal planning resources in common areas.

Resident Education Programs:

- Workshops / information on meal planning, proper food storage, and portion control.
- Recipe sharing programs using community bulletin boards or building apps.

Single-Use Item Elimination

Building Infrastructure:

- Install water refill station at lobby to eliminate bottled water.
- Provide reusable shopping bags, coffee cups, and containers in building foyer for resident borrowing.
- Implement packaging-free delivery lockers for online shopping consolidation.

REUSE Strategies

Building-Integrated Reuse Systems

Community Exchange Hubs:

- Dedicated hard waste area for furniture, household items, and clothing.
- Building application with a swap, sell, borrow option to allow occupants to share building maintenance equipment, kitchen appliances, household tools and / or children's toy.

Repurpose Stations:

- Bicycle repair station for occupants to repair their private bicycles.

Local Merri-bek Reuse Connections

Merri-bek Community Initiatives:

- Connect residents to Merri-bek's booked hard waste collection service, emphasising salvageable items.
- Facilitate participation in local Repair Cafés, for example the Pascoe Vale Repair Café at Sussex Neighbourhood House.
- Promote CERES Community Environment Park's Bike Shed and similar reuse opportunities.

Neighborhood Networks:

- Partner with local op-shops including Sacred Heart Mission, Salvos, and Brotherhood of St Laurence stores

- Connect with Sussex Neighbourhood House and the Brunswick Tool Library for reuse, tool/share, repair events.
- Facilitate connections to Merri-bek's sharing economy platforms like "Hard Rubbish Rescue Merri-bek" Facebook group.

RECYCLE Strategies

Comprehensive Sorting System

Multi-Stream Collection:

- Multi-stream sorting system: Organics (FOGO), mixed recycling, glass, e-waste, hard, and general waste
- Color-coded bins with clear multilingual signage.
- Clear signage within the bin room to educate occupants on waste separation.

Specialized Collection Points:

- E-waste collection bay for phones, computers, batteries, and small electronics
- Battery recycling station for all battery types

City of Merri-bek Recycling Integration

Council Services Utilisation:

- FOGO Program Participation: Ensure all residents have access to Merri-bek's Food and Garden Organics collection service
- Hard Waste Collections: Coordinate annual collections focusing on metal, electronics, and furniture recovery

Local Recycling Partnerships:

- Soft Plastics: Partner with nearby Coles and Woolworths stores for REDcycle program participation
- Bottle Depot: Provide a map with the locations of nearby container deposit locations
- Mattress Recycling: Utilise Merri-beks mattress recycling service and local Soft Landing facilities

Local Merri-bek Initiatives for Resident Participation

Waste Prevention Programs

- Zero Carbon Merri-bek programs: repair, reuse, borrow, swap services.
- Subsidies for reusable cloth nappies and period products via Merri-bek Council.
- Community Composting Hubs: Access to shared composting facilities at Rushall Reserve, Edinburgh Gardens, and Clifton Hill sites
- Discounted compost bins from Compost Community supported by Merri-bek.
- Repair and Reuse Networks
- Pascoe Vale Repair Café at Sussex Neighbourhood House.
- Brunswick Tool Library hosting Repair Cafés.
- Toy Library in Pascoe Vale and Brunswick West via Merri-bek Toy Library.

Education and Engagement

- Council-run workshops on composting, recycling, repair hosted by Merri-bek libraries or community hubs.
- Environmental volunteering: cleanups of local waterways (e.g. Merri Creek), or environment days in Merri-bek.
- Participate in Garage Sale Trail events within Merri-bek.

Appendix F: BESS Assessment

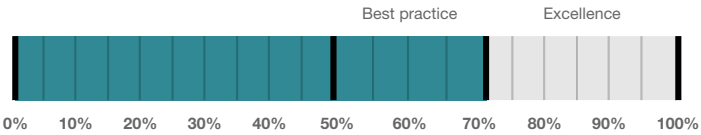
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 55 Albert St Brunswick East Victoria 3057. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Merri-bek City Council.

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

Your BESS Score

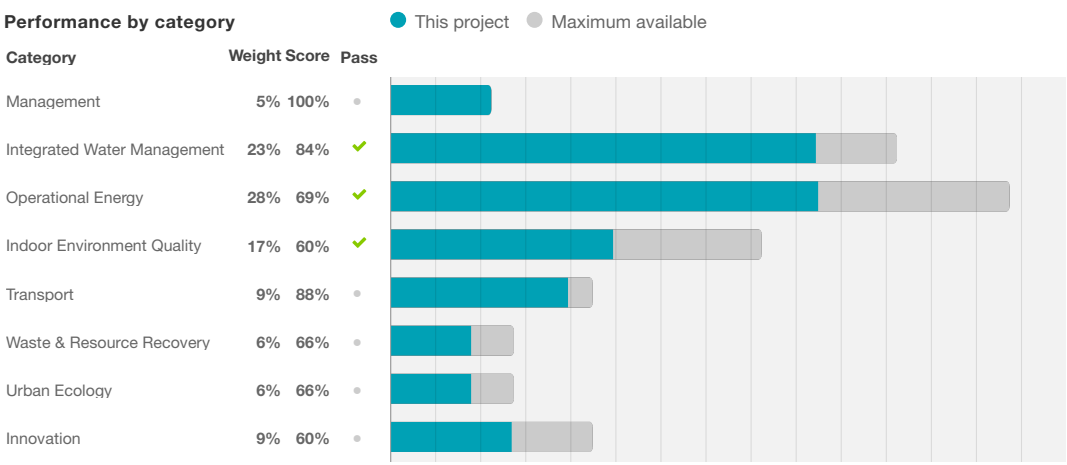


73%

Project details

Name	55 Albert Street
Address	55 Albert St Brunswick East Victoria 3057
Project ID	17F68E17-R1
BESS Version	BESS-9
Site type	Multi unit development (apartment building)
Account	info@giw.com.au
Application no.	
Site area	1,790 m²
Building floor area	4,405 m²
Date	17 September 2025
Software version	2.1.0-B.600

Performance by category



Buildings

Name	Height	Footprint	% of total footprint
Building 1	5	7,573 m²	100%

Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	Building	% of total area
Apartment				
2.10, 2.11, 2.12, 2.13, 3.10, 3.11, 3.12, 3.13	8	64.0 m²	Building 1	11%
G.01, G.02, G.03	3	161 m²	Building 1	10%
2.03, 205, 3.03, 3.05	4	82.0 m²	Building 1	7%
2.02, 2.04, 3.02, 3.04	4	80.0 m²	Building 1	7%
2.14, 3.14	2	125 m²	Building 1	5%
2.07, 2.08, 3.07, 3.08	4	56.0 m²	Building 1	5%
2.01, 3.01	2	125 m²	Building 1	5%
1.02, 1.03	2	94.0 m²	Building 1	4%
G.08, G.09	2	102 m²	Building 1	4%
4.01	1	150 m²	Building 1	3%
2.09, 3.09	2	86.0 m²	Building 1	3%
2.06, 3.06	2	86.0 m²	Building 1	3%
4.07	1	106 m²	Building 1	2%
4.06	1	114 m²	Building 1	2%
4.05	1	114 m²	Building 1	2%
4.04	1	96.0 m²	Building 1	2%
4.03	1	117 m²	Building 1	2%
4.02	1	115 m²	Building 1	2%
G.10	1	122 m²	Building 1	2%
G.05, G.06	2	60.0 m²	Building 1	2%
1.04	1	71.0 m²	Building 1	1%
1.01	1	54.0 m²	Building 1	1%
G.07	1	71.0 m²	Building 1	1%
G.04	1	52.0 m²	Building 1	1%
Total	**49**	**4,405 m²**	**100%**	

Supporting Evidence

Shown on Floor Plans

Credit	Requirement	Response	Status
Management 3.1	Annotation: Individual utility meters to be provided to all individual dwellings		-
Management 3.3	Annotation: Sub-meters to be provided to all major common area services (list each)		-

Credit	Requirement	Response	Status
Integrated Water Management 2.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Operational Energy 3.4	Location of clothes line (if proposed)		-
Operational Energy 4.2	Location and size of solar photovoltaic system		-
Indoor Environment Quality 1.1	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
Indoor Environment Quality 1.2	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
Indoor Environment Quality 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 1.3	Residential bicycle parking spaces at ground level		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Transport 2.3	Location of nominated motorbicycle parking spaces		-
Waste & Resource Recovery 2.1	Location of food and garden waste facilities		-
Waste & Resource Recovery 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 2.2	Location and size of green roof		-
Urban Ecology 2.4	Location of taps and floor waste on balconies / courtyards		-

Supporting Documentation

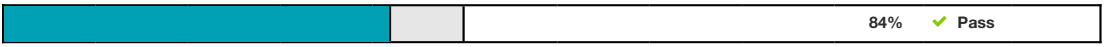
Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
Integrated Water Management 2.1	STORM report or MUSIC model		-
Operational Energy 3.6	Average lighting power density and lighting type(s) to be used		-
Operational Energy 4.2	Specifications of the solar photovoltaic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

Credit summary

Management Overall contribution 4.5%

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

IWM Overall contribution 22.5%

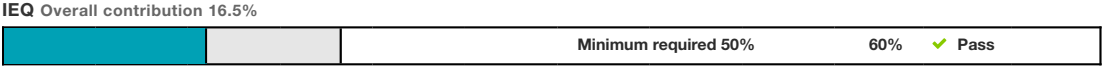


	84%	✔ **Pass**
1.1 Potable Water Use	53%	✔ Achieved
2.1 Stormwater Treatment	100%	✔ Achieved
3.1 Water Efficient Landscaping	N/A	✣ Scoped Out
	Landscape irrigation will be connected to the RWT	
4.1 Building Systems Water Use	100%	

Operational Energy Overall contribution 27.5%

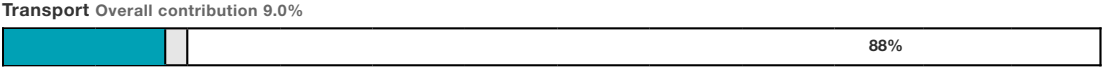
	Minimum required 50% **69%**	✔ **Pass**
1.2 Thermal Performance Rating - Residential	75%	✔ Achieved
2.1 Greenhouse Gas Emissions	0%	
2.6 Electrification	100%	
2.7 Energy consumption	100%	
3.1 Carpark Ventilation	N/A	✣ Scoped Out
	More than 40 car parks.	
3.4 Clothes Drying	59%	
3.6 Internal Lighting - Apartments	100%	
4.2 Renewable Energy Systems - Solar	100%	
4.4 Renewable Energy Systems - Other	0%	

IEQ Overall contribution 16.5%



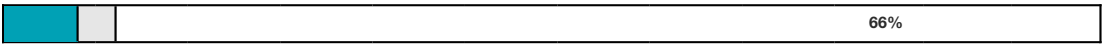
	Minimum required 50% **60%**	✔ **Pass**
1.1 Daylight Access - Living Areas	66%	
1.2 Daylight Access - Bedrooms	66%	
1.3 Winter Sunlight	0%	
2.1 Ventilation - Natural - Apartments	66%	

Transport Overall contribution 9.0%



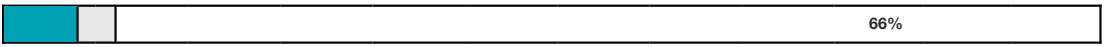
	88%	
1.1 Bicycle Parking - Residential	100%	
1.2 Bicycle Parking - Residential Visitor	100%	
1.3 Bicycle Parking - Convenience Residential	100%	
2.1 Electric Vehicle Infrastructure	100%	
2.2 Car Share Scheme	0%	
2.3 Motorbikes / Mopeds	100%	

Waste & Resource Recovery Overall contribution 5.5%



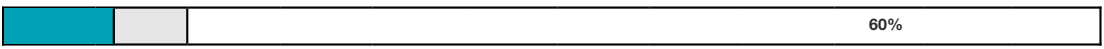
1.1 Construction Waste - Building Re-Use	0%
2.1 Operational Waste - Food & Garden Waste	100%
2.2 Operational Waste - Convenience of Recycling	100%

Urban Ecology Overall contribution 5.5%



1.1 Communal Spaces	100%
2.1 Vegetation	75%
2.2 Green Roofs	100%
2.3 Green Walls and Facades	0%
2.4 Balconies, Courtyards & Roof terraces	100%
3.1 Food Production - Residential	0%

Innovation Overall contribution 9.0%



1.1 Innovation	60%

Credit breakdown

Management Overall contribution 4.5%

100%

1.1 Pre-Application Meeting	100%
Score Contribution	This credit contributes 37.5% towards the category score.
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?
Question	Criteria Achieved ?
Project	Yes
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	100%
Score Contribution	This credit contributes 25% towards the category score.
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?
Question	Criteria Achieved ?
Apartment	Yes
3.1 Metering - Residential	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Have utility meters been provided for all individual dwellings?
Question	Criteria Achieved ?
Apartment	Yes
3.3 Metering - Common Areas	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Have all major common area services been separately submetered?
Question	Criteria Achieved ?
Apartment	Yes
4.1 Building Users Guide	100%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	Yes

IWM **Overall contribution 22.5%**

84% ✔ Pass

Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Stormwater profile	
Which stormwater modelling software are you using?:	Melbourne Water STORM tool
STORM score achieved:	104
Flow:	-
Total Suspended Solids:	-
Total Phosphorus:	-
Total Nitrogen:	-
Rainwater tank profile	
What is the total roof area connected to the rainwater tank?: Rainwater Tank 1	1,493 m²
Tank Size: Rainwater Tank 1	24,000 Litres
Irrigation area connected to tank: Rainwater Tank 1	335 m²
Is connected irrigation area a water efficient garden?: Rainwater Tank 1	No
Other external water demand connected to tank?: Rainwater Tank 1	0.0 Litres/Day
Fixtures, fittings & connections profile	
Building: All	Building 1
Showerhead: All	4 Star WELS (>= 6.0 but <= 7.5)

Bath:	
G.01, G.02, G.03 2.01, 3.01 2.14, 3.14 4.01 4.02 4.03	Medium Sized Contemporary Bath
G.04 G.05, G.06 G.07 G.08, G.09 G.10 1.01 1.02, 1.03 1.04 2.02, 2.04, 3.02, 3.04 2.03, 205, 3.03, 3.05 2.06, 3.06 2.07, 2.08, 3.07, 3.08 2.09, 3.09 2.10, 2.11, 2.12, 2.13, 3.10, 3.11, 3.12, 3.13 4.04 4.05 4.06 4.07	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	>= 5 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	>= 5 Star WELS rating

Which non-potable water source is the dwelling/space connected to?:	
G.01, G.02, G.03 G.04 G.05, G.06 G.07 G.08, G.09 G.10 1.01 1.02, 1.03 1.04 4.01 4.02 4.03 4.04 4.05 4.06 4.07	-1
2.01, 3.01 2.02, 2.04, 3.02, 3.04 2.03, 205, 3.03, 3.05 2.06, 3.06 2.07, 2.08, 3.07, 3.08 2.09, 3.09 2.10, 2.11, 2.12, 2.13, 3.10, 3.11, 3.12, 3.13 2.14, 3.14	232960

Non-potable water source connected to Toilets:	
G.01, G.02, G.03 G.04 G.05, G.06 G.07 G.08, G.09 G.10 2.01, 3.01 2.02, 2.04, 3.02, 3.04 2.03, 205, 3.03, 3.05 2.06, 3.06 2.07, 2.08, 3.07, 3.08 2.09, 3.09 2.10, 2.11, 2.12, 2.13, 3.10, 3.11, 3.12, 3.13 2.14, 3.14	Yes
1.01 1.02, 1.03 1.04 4.01 4.02 4.03 4.04 4.05 4.06 4.07	No

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

1.1 Potable Water Use	53% ✔ Achieved
Score Contribution	This credit contributes 33.3% 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	6808 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	4952 kL
Output	Proposed (including rainwater and recycled water use)
Project	4438 kL
Output	% Reduction in Potable Water Consumption
Project	34 %
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	2034 kL

2.1 Stormwater Treatment	100% ✔ Achieved
Score Contribution	This credit contributes 60% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Output	Min STORM Score
Project	100
Output	STORM Score
Project	104

3.1 Water Efficient Landscaping	N/A ✧ Scoped Out
	Landscape irrigation will be connected to the RWT
This credit was scoped out	Landscape irrigation will be connected to the RWT

4.1 Building Systems Water Use	100%
Score Contribution	This credit contributes 6.7% 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

Operational Energy Overall contribution 27.5%

		Minimum required 50%	69%	✔ Pass

Are you installing any renewable energy system(s) (other than solar photovoltaic)?:	Yes
Energy Supply:	All-electric
Solar Photovoltaic system profile	
System Size (lesser of inverter and panel capacity): Solar Photovoltaic system 1	18.0 kW peak
Orientation (which way is the system facing)?: Solar Photovoltaic system 1	North
Inclination (angle from horizontal): Solar Photovoltaic system 1	10.0 Angle (degrees)
Dwellings profile	
Building: All	Building 1
Below the floor is:	
G.01, G.02, G.03 G.04 G.05, G.06 G.07 G.08, G.09	Ground or Carpark
G.10 1.01 1.02, 1.03 1.04 2.01, 3.01 2.02, 2.04, 3.02, 3.04 2.03, 205, 3.03, 3.05 2.06, 3.06 2.07, 2.08, 3.07, 3.08 2.09, 3.09 2.10, 2.11, 2.12, 2.13, 3.10, 3.11, 3.12, 3.13 2.14, 3.14 4.01 4.02 4.03 4.04 4.05 4.06 4.07	Another Occupancy

Above the ceiling is:	
G.01, G.02, G.03 G.04 G.05, G.06 G.07 G.08, G.09 G.10 1.01 1.02, 1.03 1.04 2.07, 2.08, 3.07, 3.08 2.09, 3.09 2.10, 2.11, 2.12, 2.13, 3.10, 3.11, 3.12, 3.13	Another Occupancy
2.01, 3.01 2.02, 2.04, 3.02, 3.04 2.03, 205, 3.03, 3.05 2.06, 3.06 2.14, 3.14 4.01 4.02 4.03 4.04 4.05 4.06 4.07	Outside
Exposed sides:	
G.01, G.02, G.03 G.05, G.06 G.08, G.09 1.01 1.02, 1.03 1.04 2.02, 2.04, 3.02, 3.04 2.03, 205, 3.03, 3.05 2.07, 2.08, 3.07, 3.08 2.10, 2.11, 2.12, 2.13, 3.10, 3.11, 3.12, 3.13	1
G.04 G.07 G.10 2.06, 3.06 2.09, 3.09 4.02 4.03 4.04 4.05 4.07	2
2.01, 3.01 2.14, 3.14 4.01 4.06	3
NatHERS Annual Energy Loads - Heat: All	45.0 MJ/sqm

NatHERS Annual Energy Loads - Cool: All	12.7 MJ/sqm
NatHERS star rating: All	8.0
Type of Heating System: All	Reverse cycle space
Heating System Efficiency: All	2.5 Stars (2019 MEPS)
Type of Cooling System: All	Refrigerative space
Cooling System Efficiency: All	4 Stars (2019 MEPS)
Type of Hot Water System: All	Electric Instantaneous
Is the hot water system shared by multiple dwellings?: All	No
% Contribution from solar hot water system: All	0 %
Clothes Line: All	Shared clothesline
Clothes Dryer: All	Occupant to install

1.2 Thermal Performance Rating - Residential — 75% ✔ Achieved

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Apartment	8.0 Stars

2.1 Greenhouse Gas Emissions — 0%

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Apartment	87,426 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	96,341 kg CO2
Output	% Reduction in GHG Emissions
Apartment	-11 %

2.6 Electrification — 100%

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	Is the development all-electric?
Question	Criteria Achieved?
Project	Yes

2.7 Energy consumption — 100%

Score Contribution	This credit contributes 23.5% towards the category score.
Criteria	What is the % reduction in annual energy consumption against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Apartment	844,428 MJ
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	439,021 MJ
Output	% Reduction in total energy
Apartment	48 %

3.1 Carpark Ventilation — N/A ✣ Scoped Out

More than 40 car parks.

This credit was scoped out	More than 40 car parks.

3.4 Clothes Drying	59%
Score Contribution	This credit contributes 5.9% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?
Output	Reference
Apartment	21,138 kWh
Output	Proposed
Apartment	14,796 kWh
Output	Improvement
Apartment	29 %

3.6 Internal Lighting - Apartments	100%
Score Contribution	This credit contributes 5.9% towards the category score.
Criteria	Is the maximum illumination power density (W/m2) in at least 90% of the relevant building class at least 20% lower than required by clause J7D3(1)(a) and Table J6.2a of the NCC 2022 Vol 1 (Class 2-9)?
Question	Criteria Achieved ?
Apartment	Yes

4.2 Renewable Energy Systems - Solar	100%
Score Contribution	This credit contributes 5.9% towards the category score.
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?
Output	Solar Power - Energy Generation per year
Apartment	21,813 kWh
Output	% of Building's Energy
Apartment	17 %

4.4 Renewable Energy Systems - Other	0%
Score Contribution	This credit contributes 5.9% towards the category score.
Criteria	Does another form of renewable energy (not solar) provide 5% of the estimated energy consumption of the building class it supplies?
Question	Other Renewable Energy - Energy Generation per year
Apartment	-

IEQ **Overall contribution 16.5%**

		Minimum required 50%	**60%**	✔ **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 30% towards the category score.
Criteria	What % of living areas achieve the daylight criteria?
Question	Percentage Achieved ?
Apartment	92 %

1.2 Daylight Access - Bedrooms	66%
Score Contribution	This credit contributes 30% towards the category score.
Criteria	What % of bedrooms achieve the daylight criteria?
Question	Percentage Achieved ?
Apartment	83 %

1.3 Winter Sunlight	0%
Score Contribution	This credit contributes 10% towards the category score.
Criteria	Do 70% of dwellings receive at least 3 hours of direct sunlight in all Living areas between 9am and 3pm in mid-winter?
Question	Criteria Achieved ?
Apartment	No

2.1 Ventilation - Natural - Apartments	66%
Score Contribution	This credit contributes 30% towards the category score.
Criteria	What % of dwellings are effectively naturally ventilated?
Question	Percentage Achieved?
Apartment	88 %

Transport Overall contribution 9.0%

88%

1.1 Bicycle Parking - Residential	100%
Score Contribution	This credit contributes 22.2% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there for residents?
Question	Bicycle Spaces Provided ?
Apartment	49
Output	Min Bicycle Spaces Required
Apartment	49

1.2 Bicycle Parking - Residential Visitor	100%
Score Contribution	This credit contributes 22.2% towards the category score.
Criteria	How many secure bicycle spaces are there for visitors?
Question	Visitor Bicycle Spaces Provided ?
Apartment	10
Output	Min Visitor Bicycle Spaces Required
Apartment	10

1.3 Bicycle Parking - Convenience Residential	100%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Are bike parking facilities for residents located at ground or entry level?
Question	Criteria Achieved ?
Apartment	Yes

2.1 Electric Vehicle Infrastructure	100%
Score Contribution	This credit contributes 22.2% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	Yes

2.2 Car Share Scheme	0%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Has a formal car sharing scheme been integrated into the development?
Question	Criteria Achieved ?
Project	No

2.3 Motorbikes / Mopeds	100%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?
Question	Criteria Achieved ?
Project	Yes

Waste & Resource Recovery Overall contribution 5.5%

66%

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

Urban Ecology Overall contribution 5.5%

66%

1.1 Communal Spaces	100%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Is there at least the following amount of common space measured in square meters : * 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	184 m²
Output	Minimum Common Space Required
Apartment	78 m²

2.1 Vegetation	75%
Score Contribution	This credit contributes 44.4% towards the category score.
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?
Question	Percentage Achieved ?
Project	20 %

2.2 Green Roofs	100%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Does the development incorporate a green roof?
Question	Criteria Achieved ?
Project	Yes

2.3 Green Walls and Facades	0%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Does the development incorporate a green wall or green façade?
Question	Criteria Achieved ?
Project	No

2.4 Balconies, Courtyards & Roof terraces	100%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Is there a tap and floor waste on every balcony and courtyard (including any roof terraces)?
Question	Criteria Achieved ?
Apartment	Yes

3.1 Food Production - Residential	0%

Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	What area of space per resident is dedicated to food production?
Question	Food Production Area
Apartment	0.0 m^2
Output	Min Food Production Area
Apartment	27 m^2

Innovation **Overall contribution 9.0%**

		60%

Project Initiatives	
Initiative:	
100% Green Electricity Supply	O
ESD verification	O
Bicycle Repair Station	8
Reduce, reuse, recycle initiative	O
90% construction waste reduction	O
Description:	
100% Green Electricity Supply	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.
ESD verification	An ESD professional will be engaged throughout the design and construction process. The ESD professional will perform a minimum of 2 site inspections during the construction phase to ensure suitable implementation of the ESD initiatives. Any deficiencies compared to the endorsed SMP will be escalated to the project manager and resolved. The checkpoint assessments will be undertaken at two stages as follows: • Site Inspection 1: Prior to installation of internal linings. • Site inspection 2: At the time of project completion.
Bicycle Repair Station	Inclusion of secure, convenient and accessible equipment including repair stands, pumps and tools for fixing bicycles.
Reduce, reuse, recycle initiative	A Reduce, Reuse Recycle strategy is included within this Waste Management Plan and the appendix of the Sustainable Management Plan. This strategy outlines State Government and local Council waste ambitions, local reduce, reuse and recycle opportunities, waste minimisation strategies and clear guidance on waste storage sizing within apartment / tenancies and bin storage space.
90% construction waste reduction	At least 90% of the waste generated during construction and demolition has been diverted from landfill.
Points Targeted:	
100% Green Electricity Supply	2
ESD verification	1
Bicycle Repair Station	-
Reduce, reuse, recycle initiative	1
90% construction waste reduction	1

Points:	
100% Green Electricity Supply	-
ESD verification	-
Bicycle Repair Station	1
Reduce, reuse, recycle initiative	-
90% construction waste reduction	-

1.1 Innovation	60%

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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