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Date: 01_MAY 2026

Environmentally Sustainable Design Report

64-66 & 68-70 Hanover Street, Fitzroy

HIP V. HYPE

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We seek to partner with those who are willing to think strategically to achieve better. We lead, collaborate and support others to deliver impact and build Better Cities and Regions, Better Buildings and Better Businesses.

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VERSION	DATE	ISSUE	PREPARED BY	APPROVED BY
01	22 AUG 2025	Draft for OVGA submission	Roberto Petruzzi, Technical Director	David Mahony, Head of Better Buildings
02	05 SEPT 2025	Preliminary for OVGA submission	Roberto Petruzzi, Technical Director	David Mahony, Head of Better Buildings
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04	04 DEC 2025	For Town Planning submission	Bhargavi Mysore Senior Sustainable Building Designer	Roberto Petruzzi, Technical Director
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07	01 MAY 2026	RFI Responses	Bhargavi Mysore Senior ESD Consultant	Roberto Petruzzi, Technical Director

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HIP V. HYPE is Equal Assurance ISO 9001, ISO 14001 and ISO 45001 certified.

Contents

Executive Summary

This Environmentally Sustainable Design Report outlines the range of initiatives that have been targeted and incorporated into the design, construction and operation of the proposed development at 64-66 & 68-70 Hanover Street, Fitzroy.

The project has been designed following the BESS Framework meeting best practice. The design is also aligned with the Great Design Fast Track design principles prioritising sustainable outcomes, with many features embedded into the design and construction to realise a high-performing project that benefits people, place and planet.

DESIGN RESPONSE

This Sustainability Management Plan (SMP) has been prepared to communicate the approach taken to embed sustainability into the design, construction and operation of the site as a mixed-use residential precinct. The project has a focus on sustainable living, with many features embedded into the design and construction to realise a high-performing project that benefits people, place and planet

64-66 & 68-70 Hanover Street, Fitzroy demonstrates industry 'Best Practice' within BESS, achieving an overall score of 69%.

CATEGORY	SCORE
Management	99%
Integrated Water Management	81%
Operational Energy	82%
Indoor Environment Quality	69%
Transport	88%
Waste & Resource Recovery	66%
Urban Ecology	21%
TOTAL BESS SCORE	**69%**

Sustainability related Design Principles aligned with the Great Design Fast Track are highlighted in the table below.

GDFT DESIGN PRINCIPLE	INITIATIVE
Landscaped homes	– Significant landscaping area (approx. 28% of the site) – Approximately 342 m^2 of high-quality communal area
Sustainable homes	– High performance thermal envelope – High performance building services – All electric development powered by renewables – Effective metering for ongoing monitoring – High performance water fittings & fixtures – Integrated water design – Secure bicycle parking facilites – EV charging facilities – Appropriate construction and operational waste management – Prioritisation of sustainable products – Reduction in upfront carbon via good design and product selection – Urban heat island effects reduction
Healthy homes	– Good daylight access – Appropriate ventilation strategies – Minimised TVOC and Formaldehyde emissions by products – High levels of thermal comfort – Good acoustic comfort

Introduction

This Environmentally Sustainable Design Report has been prepared to communicate the approach taken to embed sustainability into the design, construction and operation of the proposed development at 64-66 & 68-70 Hanover Street, Fitzroy.

The project has been designed following the BESS Framework meeting best practice. The design also aligns with the Great Design Fast Track design principles with the following key initiatives incorporated into the project:

- **Landscaped homes**
- **Sustainable homes**
- **Healthy homes**
- **Adaptable homes**
- **Good value homes**

PROJECT OVERVIEW

The proposed development is located at 64-66 & 68-70 Hanover Street, Fitzroy, approximately 3km from the Melbourne CBD. The development aims to deliver a multi-level residential apartment and town house building incorporating 66 dwellings, 2 retail tenancies and communal areas over two levels of basement.

DOCUMENTS

This report has been informed by the architectural drawings produced by SJB Architects dated 01/05/2026.

STATUTORY CONTEXT

City of Yarra Planning Scheme

Clause 15.01-2L-02 of the City of Yarra Planning Scheme sets out a number of policy objectives under key sustainability categories. The overarching objective is that development should achieve best practice in environmentally sustainable development from the design stage through to construction and operation under key ESD criteria.

Clause 52.25 Great Design Fast Track

The Great Design Fast Track is available for apartment and town house proposals that are two to eight storeys in height with eight or more homes that demonstrate specified principles for great design.

Its purpose is to facilitate development that is of a high quality in its design, liveability and sustainability. It requires applications to demonstrate that new housing achieve several design principles, including:

- Neighbourly homes
- Welcoming homes
- Landscaped homes
- Sustainable homes
- Healthy homes
- Adaptable homes
- Good value homes

Also, the following mandatory requirements (as they relate to ESD) apply under The Great Design Fast Track:

- The proposed development achieves a minimum NatHERS rating of 8.0 stars with no individual dwelling less than 6.5 stars
- Each proposed dwelling provides effective natural ventilation, which includes cross ventilation, single sided ventilation or mechanically assisted ventilation

National Construction Code

The project shall be designed to exceed the requirements of Section J Energy Efficiency of the National Construction Code (NCC) 2022 Volume 1 Amendment 1.

The energy efficiency requirements apply to the conditioned areas of a building to ensure adequate thermal comfort conditions can be maintained within the space. Under Section J the project may be classified as a mix of:

- Class 2: domestic apartment buildings
- Class 6: buildings where retail goods are sold or services are supplied to the public
- Class 7a: carpark

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Management

Effective management practices can improve the sustainability performance of a project by influencing areas where decision-making is critical. Projects should prioritise the implementation of processes and strategies that support positive sustainability outcomes during construction.

PROJECT RESPONSE

Pre-application Meeting

- HV.H have been involved since the early design stages and has participated in a pre-application meeting with the OVGA.

Thermal Performance Modelling

- Preliminary NatHERS modelling has been undertaken. Refer to Appendix A
- Preliminary facade assessment has been undertaken. Refer to Appendix B

Metering

- Separate utility meters (electricity and water) shall be provided to each dwelling and commercial tenancy to facilitate ongoing monitoring of resource usage by residents.
- All major common area services (e.g. lifts, communal internal and external lighting, rainwater tank, solar PV generation, etc.) shall be separately submitered.

Building Users Guide

- A building user's guide with information on how to most efficiently operate all active systems will be provided through a resident welcome pack

Rooftop Solar at Burwood Brickworks. Photography by Kim Landy.

Integrated Water Management

Water is an increasingly important natural resource. Well managed, it can provide for a multitude of uses critical to our day to day lives, while also sustaining the environment on which we fundamentally depend.

However, there are increasing demands placed on our water sources, and unsustainable water management practices are common.

PROJECT RESPONSE

Potable Water Use

- The following minimum WELS ratings for fittings and fixtures shall be specified:
  - Showers: 4-star (<7.5L/min)
  - Bath: Medium-sized contemporary (to selected units)
  - Kitchen Taps: 5-star
  - Bathroom Taps: 6-star
  - Dishwashers: 5-star
  - Washing machine: Occupants to install

Stormwater Treatment

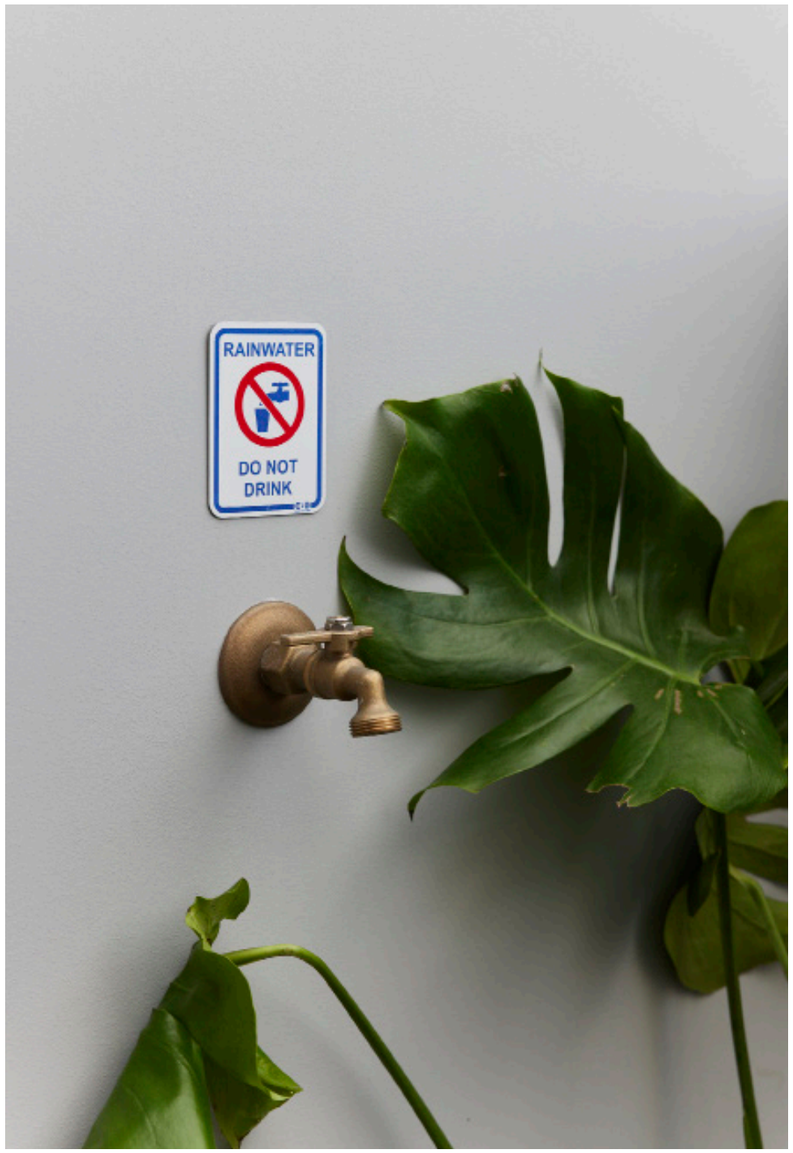
- Rainwater runoff collection from all clean roof areas (668m^2) into a 40 kL tank for reuse in toilet flushing
- Rainwater runoff collection from all trafficable terraces (696m^2) into a 7 m^2 raingarden

Water Efficient Landscaping

- The landscape design and plant species selection shall be water efficient (i.e. landscaping should have no irrigation and not require watering after an initial period when plants are getting established).

Building Systems Water Use

- Mechanical building systems shall be air-cooled rather than water-cooled
- Water used in fire test system shall be collected and reused within the system



Rainwater connections to balcony taps at Ferrars & York.
Photography by Kim Landy.

Operational Efficiency

An energy efficient building is the product of an effective response to environmental factors, early strategic thinking in design and a considered approach to construction.

Achieving a highly energy efficient building doesn't require a significant additional upfront cost. Often, it's just ensuring basic principles of passive design are integrated early on, and that ongoing energy use is considered when selecting building services and appliances.

PROJECT RESPONSE

Thermal Performance

- A preliminary NatHERS assessment has been conducted for a sample of representative dwellings demonstrating the design potential for the project to achieve an average NatHERS rating of 8.0-star and no dwelling achieving a rating of less than 6.5 stars. Refer to Appendix A for more information.
- A NCC 2022 Section J assessment via Deemed-to-Satisfy Method has been conducted for the retail tenancies and residential common areas achieving a 15% improvement in thermal performance compared to minimum requirements. Refer to Appendix B for more information.

Heating and Cooling

- The heating and cooling systems within the apartments and commercial tenancies shall have a minimum 3-star SEER star rating in both heating and cooling mode.
- Lift lobbies and corridors (excluding the main entrance lobby to the building) shall be naturally ventilated and/or provided with only supply and exhaust air but without active heating and cooling.

Carpark Ventilation

- Carbon Monoxide monitoring shall be installed to control the operation and speed of the ventilation fans.

Hot Water

- The domestic hot water systems shall be provided by electric heat pumps with a minimum COP of 3.0 at 20° C ambient and 65° C leaving temperature.
- All hot water pipes outside of the thermal envelope shall be insulated with a minimum R-value of 2.0, while all hot water pipes inside of the thermal envelope shall be insulated with a minimum R-value of 0.5.

Internal Lighting

- The maximum illumination power density of the tenancies shall meet the requirements outlined in Table J7D3a of the NCC 2022, while the maximum illumination power density of the apartments shall be at least 20% lower than required by Clause J7D3(1)(a) and Table J6.2a of the NCC 2022.

Outdoor Lighting

- Outdoor lighting shall comply with AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting, and all external luminaires shall have an Upward Light Output Ratio (ULOR) of less than 5% relative to their actual mounted orientation.

Electrification

- The development shall be all electric and powered fully by renewable energy produced either on-site and/or off-site.

Renewable Energy

- A 40.0 kWp solar photovoltaic system shall be installed on the rooftop, offsetting residential and retail power usage.

Indoor Environment Quality

Best practice design for Indoor Environment Quality means that building occupants can enjoy a comfortable space with high air quality, adequate daylight and ventilation. Indoor environment quality is affected by building orientation and layout, window sizes and specification, shading devices, products used for construction and fit-out and neighbouring structures.

PROJECT RESPONSE

Daylight Access

- 96% of living areas, 99% of bedrooms and 87% of retail tenancies achieve appropriate daylight access (refer to Appendix D)
- The current glazing specification with a maximum SHGC of 0.48 and VLT of 0.5 help reduce the risks of glare into the apartments.

Ventilation

- The apartments have been designed to maximise the opportunities for natural ventilation. Where effective natural ventilation cannot be achieved, the dwellings will have mechanically assisted ventilation. The following are the apartments with mechanical assisted ventilation:
  - G.01, G.02
  - 1.01, 1.02, 1.04, 1.05, 1.06, 1.07, 1.08, 1.09
  - 2.01, 2.02, 2.04, 2.05, 2.06, 2.07, 2.09, 2.10, 2.11, 2.12
  - 3.01, 3.02, 3.03, 3.04, 3.05, 3.06, 3.08, 3.09, 3.10
  - 4.01, 4.02
  - 5.01, 5.02
  - 6.01, 6.02
  - 7.02
- The commercial tenancies shall be provided with a 100% increased in outdoor air compared to AS 1668:2012.

Thermal Comfort

- All apartments will have high quality double glazed windows contributing to high thermal comfort outcomes
- A high degree of thermal comfort is provided with the apartments and retail tenancies. Refer to Appendix A and B for more information.

Acoustics

- Internal ambient noise levels within the apartments' living rooms and bedrooms shall be no greater than the relevant upper range value as recommended in the current AS/NZS 2107:2016.

Air quality

- All paints, adhesives, sealants and carpet applied on-site shall meet the maximum Total Volatile Organic Compound (TVOC) limits outlined in Appendix E.
- All engineered wood meet products including particleboard, plywood, Medium Density Fibreboard (MDF), Laminated Veneer Lumber (LVL), High-Pressure Laminate (HPL), Compact Laminate and decorative overlaid wood panels shall meet the Formaldehyde emission limits outlined in Appendix E.

Transport

The sustainability of transport modes is related to both environmental, social and economic factors. Buildings, infrastructure and behaviour conducive to sustainable transport modes can lead to reduced greenhouse gas emissions, less air pollution, lower living costs and improved health and well-being.

PROJECT RESPONSE

Bicycle Parking

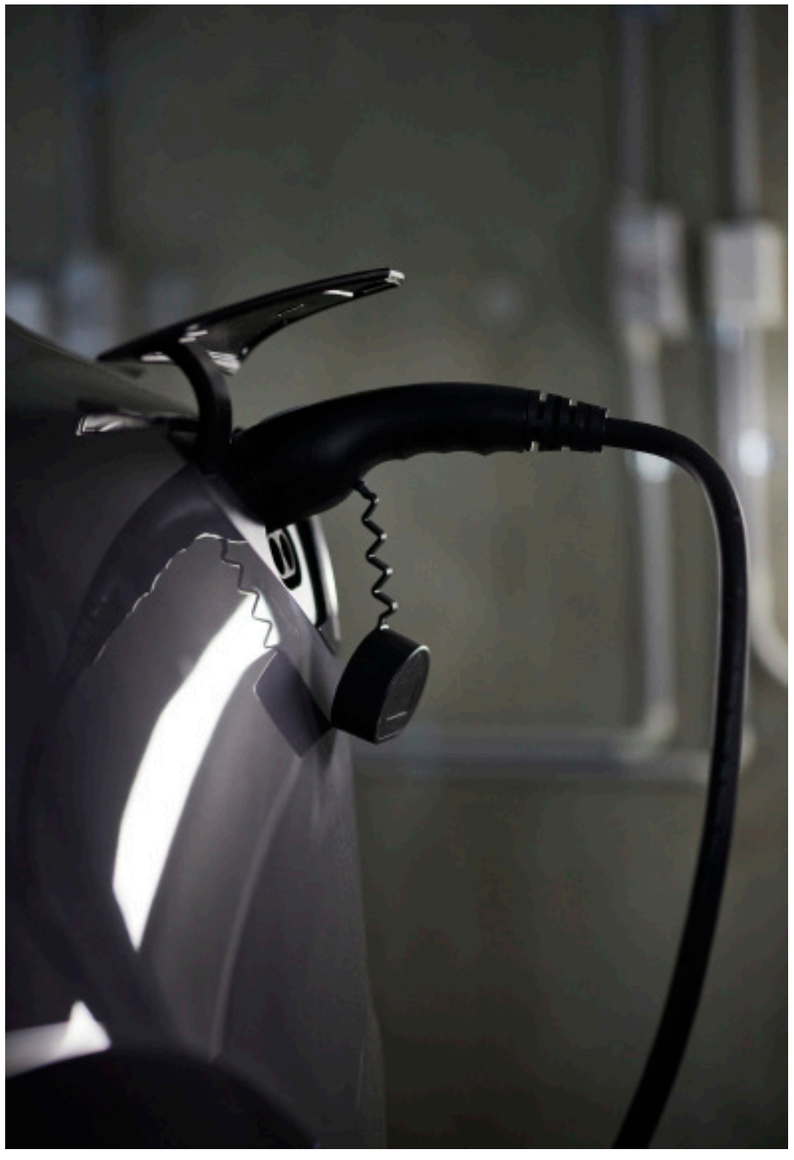
- 32 double tier and 4 large bike stalls are provided for residents and commercial tenants within a secured bike store located on Ground Floor. Further, 12 bicycle parking hoops spaces are provided for visitors at the front of the development.

Electric Vehicles

- At least one EV charging facility is provided at basement level.

Motorbikes Parking

- At least five motorbikes parking spaces shall be provided on Basement Level 02.



Integrated EV charging in car-stackers.
Photography by Kim Landy.

Waste & Resource Recovery

New buildings and infrastructure generate waste during both construction and operation. With considered thinking and minor changes during design, both can be significantly reduced.

Over 75% of waste generated during demolition and construction is clean excavated material, concrete, bricks and timber which are all highly recyclable.

PROJECT RESPONSE

Construction Waste

- At least 90% of construction and demolition waste (excluding hazardous waste) shall be diverted from landfill.

Waste During Operation

- Separated waste streams bins shall be provided at basement and ground floor level making it easy for building users to divert as much waste from landfill as possible.
- Adequate number of bins shall be provided for the separation of waste streams (at least garbage, recycling, and FOGO) within each apartment kitchen joinery.

Organic food dehydrator at Burwood Brickworks.
Photography by Kim Landy.

Urban Ecology

The impact of urban development on land use and biodiversity, and the best way to have a positive impact on this, varies dramatically according to context. Urban ecology is also critical to human health and to establishing resilience to urban heat impacts and the extreme heat that climate change is already bringing.

PROJECT RESPONSE

Communal Spaces

- The central landscaped courtyard provides significant amenity for building occupants covering an area of 347 square metre. Further, approximately 120 square metre of communal area is provided by the ground floor lobby and an additional 231 square metre is provided on level 7 with the outdoor terrace.

Vegetation

- The development provides significant landscaping and vegetation cover across the site. Approximately 28% of the site is covered with vegetation. This is achieved on ground floor via a central landscaped courtyard, and street frontage planting along Fitzroy Street and Brunswick Place. Planter boxes to each balcony / terrace further increase the greening of the development across its entire height.

Urban Heat Island

- At least 75% of the site area, when viewed in plan view, shall be covered with either and/or a combination of vegetation, solar PV, and materials with a Solar Reflective Index (SRI) of minimum 50.

Rooftop productive gardens at Burwood Brickworks.
Photography by Kim Landy.

Material

All materials used in construction have an environmental and social impact. This varies dramatically depending on the raw materials used, manufacturing process, the application and ongoing maintenance requirements.

Careful consideration in selecting materials can significantly reduce the overall environmental and social impact of the project. Materials that have lower embodied energy, use recycled content and renewable resources, exclude harmful substances such as Volatile Organic Compounds (VOCs) and are more durable will result in a more sustainable, longer lasting and safer building.

PROJECT RESPONSE

Timber Products

- At least 95% (by cost) of all timber used in the building and construction works shall be certified by a forest certification scheme and be accompanied by a relevant Chain of Custody (CoC) certificate.

Permanent Formwork, Pipes, Flooring, Blinds and Cables

- At least 90% (by cost) of all permanent formwork, pipes, flooring, blinds and cables used as part of the proposed works shall meet Best Practice Guidelines for PVC, or alternatively not contain PVC and have an Environmental Product Declaration (EPD).

Structural and Reinforcing Steel

- At least 95% (by cost) of the building's steel used by the project shall be sourced from a Responsible Steel Maker.

Upfront Carbon Reduction

- The development shall target a 10% reduction in upfront carbon compared to a reference building. This shall be achieved via a combination of efficient structural design and material selection, including low carbon concrete.

Recycled and re-purposed materials at Revival.
Photography by Kim Landy.

Conclusion

This Environmentally Sustainable Management Plan has been prepared to communicate the approach taken to embed sustainability into the proposed development at 64-66 & 68-70 Hanover Street, Fitzroy in accordance with the Great Design Fast Track Design Principles and SDAPP. The project prioritises sustainable outcomes, with many features embedded into the design and construction to realise a high-performing project that benefits people, lace and planet.

CONCLUDING REMARKS

This report outlined the range of sustainability initiatives that have been included in the design of the proposed development at 64-66 & 68-70 Hanover Street, Fitzroy.

The development proposal demonstrates a holistic approach to sustainable urban development that addresses the ESD objectives of the City of Yarra.

A copy of the BESS scorecard used to benchmark this project is attached in Appendix F.

No Planet B..
Photography by Kim Landy.

Appendix A: Preliminary NatHERS Assessment

Preliminary NatHERS Assessment

A preliminary NatHERS assessment on a sample set of representative apartments has been completed using the NatHERS software Hero v4.1 to inform the design in relation to insulation and glazing specifications and to ensure the key projects requirements can be met.

This section describes the assumptions used and result obtained.

BUILDING FABRIC ASSUMPTIONS

The following table summarises the modelling parameter used as part of the assessment.

ITEM	THERMAL PERFORMANCE VALUES	COMMENTS
EXTERNAL WALLS	R2.5 (90mm)	90mm steel frame @ 600
PARTY WALLS	R2.5 (90mm)	90mm steel frame @ 600
INTERNAL WALLS	Uninsulated	90mm steel frame @ 600
CONCRETE ROOF AND EXPOSED CEILING	R4.6 (100mm)	Direct fixed to underside of concrete slab
INTERMEDIATE FLOORS	Uninsulated	Between apartments
INTERMEDIATE EXPOSED FLOORS	R2.0 (50mm)	Direct fixed to underside of concrete slab
GLAZING PERFORMANCE	Typical U_w 2.23 (or less) $SHGC_w$ 0.39 (±10%) TH05 U_w 2.00 (or less) $SHGC_w$ 0.48 (±10%)	Double glazed in thermally broken aluminium frames
DOWNLIGHTS	Number currently assumed as follow: – 2x in bedrooms – 2x in bathrooms / ensuites – 6x in kitchen / living areas – 1x in laundries, and walk in pantries	
EXHAUST FANS	Number currently assumed as follow: – 1x in kitchen – 1x in bathrooms – 1x in laundry	

Preliminary NatHERS Assessment

THERMAL PERFORMANCE RESULTS

LEVEL	TYPE	UNIT	HEATING LOAD (MJ/m²)	COOLING LOAD (MJ/m²)	TOTAL (MJ/m²)	NATHERS RATING
GF	1.Bed	G.01	25.4	13.0	38.4	8.3
GF	Duplex	G.04	38.9	27.6	66.5	6.8
GF	TH	TH.03	27.5	9.7	37.2	8.3
GF	TH	TH.05	44.5	7.2	51.7	7.5
L1	1.Bed	1.02	27.3	26.6	53.9	7.4
L1	2.Bed	1.04	21.2	18.0	39.2	8.2
L1	1.Bed	1.05	20.3	22.0	42.3	8.1
L2	2.Bed	2.03	41.7	10.6	52.4	7.4
L3	2.Bed	3.02	37.0	12.3	49.3	7.7
L3	2.Bed	3.06	30.1	9.7	39.8	8.2
L3	3.Bed	3.07	18.5	6.3	24.8	9.0
L3	2.Bed	3.10	16.9	7.7	24.6	9.0
L4	2.Bed	4.01	38.6	19.7	58.3	7.2
L4	3.Bed	4.02	29.8	15.6	45.4	7.9
L4	3.Bed	4.03	29.0	12.7	41.7	8.1
L4	3.Bed	4.04	11.6	19.7	31.3	8.6
L4	3.Bed	4.05	21.4	16.4	37.8	8.3
L7	3.Bed	7.01	18.2	9.8	28.0	8.8
L7	3.Bed	7.02	35.6	7.7	43.2	8.0
L7	3.Bed	7.03	28.7	10.9	39.6	8.2
AVERAGE			**28.2**	**14.1**	**42.3**	**8.0**

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Apartments' Thermal Comfort

THERMAL COMFORT RESULTS

A preliminary thermal comfort analysis has been conducted in the Hero Software to establish the likely percentage of occupied hours during which internal temperatures remain within 18-24°C in free-running mode (i.e. without any active heating and cooling systems).

The table on the right outlines the results of the analysis and indicates across the sample set, comfort conditions will be maintained for 70.6% of the occupied hours. Temperatures below 18°C will be experienced for 21.9% of occupied hours (although temperatures below 15°C will be experienced for only 2.8% of the time), and temperatures above 24 C will be experienced for 7.5% of the time, with temperature above 27°C experienced only 1.8% of the time.

Overall, this indicates that the development will be able to maintain comfort conditions for the majority of the time even without active heating and cooling, and that indoor temperatures associated with health risks are minimised.

LEVEL	TYPE	UNIT	OCCUPIED HOURS BETWEEN 18-24 C
GF	1.Bed	G.01	8136
GF	Duplex	G.04	7876
GF	TH	TH.03	8167
GF	TH	TH.05	8167
L1	1.Bed	1.02	7442
L1	2.Bed	1.04	7775
L1	1.Bed	1.05	7839
L2	2.Bed	2.03	8004
L3	2.Bed	3.02	6174
L3	2.Bed	3.06	7805
L3	3.Bed	3.07	8156
L3	2.Bed	3.10	7995
L4	2.Bed	4.01	7298
L4	3.Bed	4.02	7680
L4	3.Bed	4.03	7867
L4	3.Bed	4.04	7932
L4	3.Bed	4.05	7897
L7	3.Bed	7.01	8161
L7	3.Bed	7.02	7920
L7	3.Bed	7.03	8322
AVERAGE			7918

Appendix B: Preliminary NCC Section J Assessment

Energy NCC Section J Assessment

A preliminary Energy Efficiency assessment of the building thermal envelope has been conducted following the Deemed-to-Satisfy method.

The final Section J may be conducted following either a DTS or a Verification Method or a combination of the two.

ENERGY EFFICIENCY ASSESSMENT

An preliminary Energy Efficiency assessment has been conducted to advise on the thermal performance requirements of the building thermal envelope in order to meet Council ESD expectations and to ensure that the development has the design potential to achieve its sustainability ambitions.

The following table outlines the assumptions that have been used as part of the preliminary assessment.

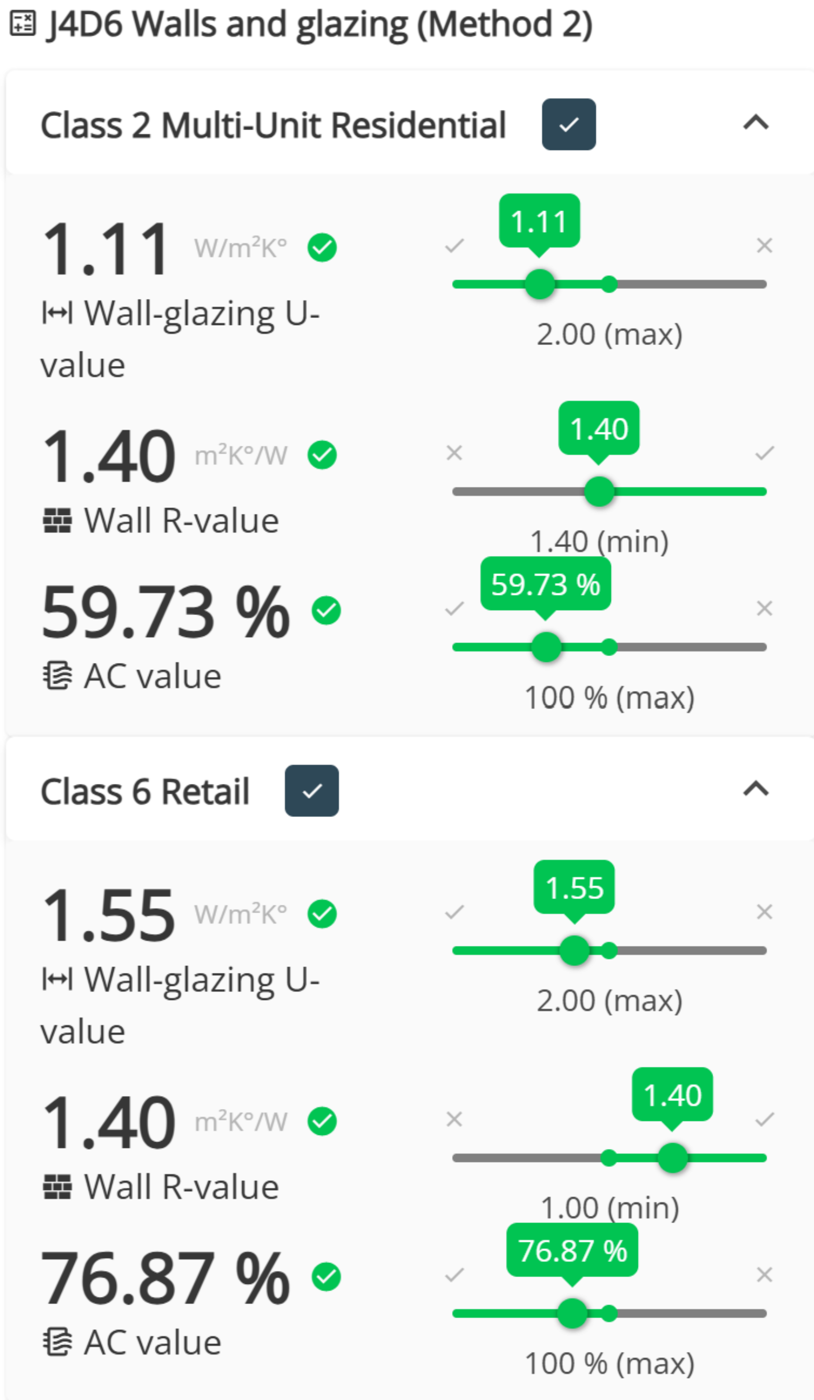
FABRIC ELEMENT	REQUIREMENT
External walls	R_T1.4
Internal walls	R_T1.4
Floors	R_T2.3
Roofs	R_T3.7
Glazing	U_w3.50 $SHGC_w$0.35

THERMAL COMFORT RESULTS

SPACE	PMV BETWEEN -1 AND 1
Tenancy 1	99.59%
Tenancy 2	99.45%

NCC 2022 FACADE CALCULATOR

A copy of the NCC 2022 outputs from Better Buildings (EnergyPlus) is provided hereafter.



Appendix C: Stormwater Pollution Reduction Strategy

Stormwater Treatment

A preliminary stormwater treatment approach has been developed to ensure that the Best Practice Stormwater Pollution Reduction Targets can be met by the development.

STORMWATER QUALITY REQUIREMENTS

In order to demonstrate compliance with the minimum planning requirements a STORM / Blue Factor score of at least 100% must be achieved.

See extract on the right for the preliminary results.

STORMWATER TREATMENT APPROACH

A preliminary assessment using Blue Factor has been carried out based on the following WSUD measures:

- Rainwater runoff collection from all clean roof areas (668m²) into a 40 kL tank for reuse in toilet flushing
- Rainwater runoff collection from all trafficable terraces (696m²) into a 7 m² raingarden

Refer to the mark up on the next page for an indication of proposed catchment areas.

Project # C744A248 - 64-66 & 68-70 Hanover Street, Fitzroy
64-66 Hanover St, Fitzroy VIC 3065, Australia
10 November 2025 10:01 a.m.

BLUE FACTOR®

64-66 & 68-70 Hanover Street, Fitzroy

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

100%
SCORE

Project details

Name	64-66 & 68-70 Hanover Street, Fitzroy
Street address	64-66 Hanover St, Fitzroy VIC 3065, Australia
Municipality	Yarra
Site area	2414 m²
Planning Number	

Flow and pollutant load reductions

Item	Result	Target
Mean annual runoff volume harvested or evapotranspired (%)	27%	>28%
Mean annual runoff volume infiltrated or filtered (%)	0%	>9%
Total suspended solids (%)	51%	>80%
Total phosphorus (%)	46%	>45%
Total nitrogen (%)	45%	>45%
Total gross pollutants (%)	53%	>70%

Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision	
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	ROOF PLAN	21725	SD02_11		1 : 250 @ A3		

SJB Architects
L5, 18 Oliver Lane
Melbourne VIC
3000 Australia
T 61 3 9659 6688
sjb.com.au

Appendix D: Daylight Assessment

Daylight Assessment

A daylight study has been conducted for the proposed development in order to demonstrate that appropriate levels of daylight access can be achieved.

DAYLIGHT ASSESSMENT

The Daylight Factor (DF) methodology has been used to evaluate daylight access to all regularly occupied spaces within the development. Daylight Factor describes the percentage of daylight achieved in the internal spaces compared to the daylight available outdoor. Calculations are based on simulations of a uniform sky condition that do not take into consideration the variation that can occur throughout the year.

Daylight modelling has been conducted using Better Building which uses the Radiance daylight simulation engine to model daylight access to a space.

The parameters used as part of the assessment are summarised in the following table.

GENERAL BUILDING SIMULATION PARAMETERS	
Site rotation from true north	0
Building Class	2 (Residential) 6 (Retail)
Weather Data	AUS_VIC.Melbourne.948680_RMY.epw
Sky	Uniform Design Sky @ 10,000 Lux
Software	Better Building (Radiance)
Working Plane	0.75m
Total Assessed Floor Area	3,851 m^2

SURFACE REFLECTANCE	
Floors	0.3
Walls	0.7
Ceilings	0.7
Shading	0.2
Ground	0.2

GLAZING VISIBLE LIGHT TRANSMITTANCE	
External Glazing	0.5

GEOMETRY	
Overshadowing	Neighbouring buildings that provide overshadowing have been included within the model.
Local shading	All balconies, canopies and reveals have been modelled as per the architectural drawings.

Daylight Assessment

RESULTS

The results obtained from the modelling are summarised in the following tables. The daylight plots are also included for reference.

Commercial Tenancies

ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
Tenancy 1	56	41	73
Tenancy 2	57	57	100
TOTAL	**113**	**98**	**87**

Bedrooms

ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
G.01 Bed	11	9	84
G.02 Bed	10	9	91
G.03 Bed	11	6	56
G.03 Bed	11	11	100
G.04 Bed	10	10	100
G.05 Bed	10	10	100
G.06 Bed	10	10	100
TH.01 Bed	8	8	100
TH.01 Bed	10	10	100
TH.02 Bed	8	8	100
TH.02 Bed	8	8	97
TH.02 Bed	9	9	100
TH.03 Bed	8	8	97
TH.03 Bed	8	8	100
TH.03 Bed	10	10	100
TH.04 Bed	8	8	100
TH.04 Bed	8	8	100
TH.04 Bed	9	9	100
TH.05 Bed	9	9	100
TH.05 Bed	12	12	100
TH.05 Bed	10	10	100
TH.05 Bed	9	9	100
TH.06 Bed	10	9	88
TH.06 Bed	12	12	100
TH.06 Bed	11	11	100
TH.06 Bed	10	9	93
TH.07 Bed	10	9	91
TH.07 Bed	12	12	100
TH.07 Bed	9	9	92
TH.07 Bed	11	11	100
1.01 Bed	10	10	100
1.02 Bed	9	9	100
1.03 Bed	9	8	94
1.03 Bed	9	9	100
1.04 Bed	10	10	100
1.04 Bed	11	11	100
1.05 Bed	10	9	88
1.06 Bed	10	10	100
1.07 Bed	9	9	100
1.07 Bed	11	11	100
1.08 Bed	9	9	100
1.08 Bed	12	12	100
1.09 Bed	11	11	100
1.09 Bed	9	9	100
1.10 Bed	10	10	100
2.01 Bed	10	10	100
2.02 Bed	9	9	100

Daylight Assessment

ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
2.03 Bed	9	9	100
2.03 Bed	9	9	100
2.04 Bed	10	10	100
2.04 Bed	11	11	100
2.05 Bed	10	10	100
2.06 Bed	10	10	100
2.06 Bed	10	10	100
2.07 Bed	11	11	100
2.08 Bed	10	10	100
2.08 Bed	9	9	100
2.08 Bed	9	9	100
2.09 Bed	9	9	100
2.09 Bed	11	11	100
2.10 Bed	12	12	100
2.10 Bed	9	9	100
2.11 Bed	9	9	100
2.11 Bed	11	11	100
2.12 Bed	10	10	100
3.01 Bed	9	9	100
3.02 Bed	9	9	100

ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
3.02 Bed	9	9	100
3.03 Bed	10	10	100
3.03 Bed	11	11	100
3.04 Bed	10	10	100
3.06 Bed	10	10	100
3.06 Bed	10	10	100
3.07 Bed	9	9	100
3.07 Bed	10	10	100
3.07 Bed	9	9	100
3.08 Bed	9	9	100
3.08 Bed	11	11	100
3.09 Bed	9	9	100
3.09 Bed	12	12	100
3.10 Bed	9	9	100
3.10 Bed	11	11	100
4.01 Bed	9	9	100
4.01 Bed	9	9	100
4.02 Bed	11	11	100
4.02 Bed	11	11	100
4.02 Bed	11	11	100
4.03 Bed	10	10	100

ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
4.03 Bed	10	10	100
4.03 Bed	10	10	100
4.04 Bed	10	10	100
4.04 Bed	11	11	100
4.04 Bed	10	10	100
4.05 Bed	11	11	100
4.05 Bed	9	9	100
4.05 Bed	9	9	100
5.01 Bed	9	9	100
5.01 Bed	9	9	100
5.01 Bed	9	9	100
5.02 Bed	11	11	100
5.02 Bed	11	11	100
5.02 Bed	11	11	100
5.03 Bed	10	10	100
5.03 Bed	10	10	100
5.03 Bed	10	10	100
5.04 Bed	10	10	100
5.04 Bed	10	10	100
5.04 Bed	11	11	100
5.05 Bed	9	9	100

Daylight Assessment

ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
5.05 Bed	9	9	100
5.05 Bed	11	11	100
6.01 Bed	9	9	100
6.02 Bed	11	11	100
6.02 Bed	11	11	100
6.02 Bed	11	11	100
6.03 Bed	10	10	100
6.03 Bed	10	10	100
6.03 Bed	10	10	100
6.04 Bed	10	10	100
6.04 Bed	11	11	100
6.04 Bed	10	10	100
6.05 Bed	11	11	100
6.05 Bed	9	9	100
6.05 Bed	9	9	100
7.01 Bed	9	9	100
7.01 Bed	12	12	100
7.01 Bed	9	9	100
7.02 Bed	10	10	100
7.02 Bed	10	10	100
7.02 Bed	10	10	100

ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
7.03 Bed	14	14	100
7.03 Bed	11	11	100
7.03 Bed	10	10	100
TOTAL	**1,347**	**1,334**	**99**

Living

ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
G.01 Living	29	10	33
G.02 Living	23	8	32
G.03 Living	28	28	100
G.04 Living	28	28	100
G.05 Living	30	30	100
G.06 Living	29	29	100
TH.01 Living	45	43	96
TH.02 Living	43	40	92
TH.03 Living	43	40	93
TH.04 Living	40	40	100
TH.05 Living	45	45	100
TH.06 Living	48	48	100
TH.07 Living	47	47	100

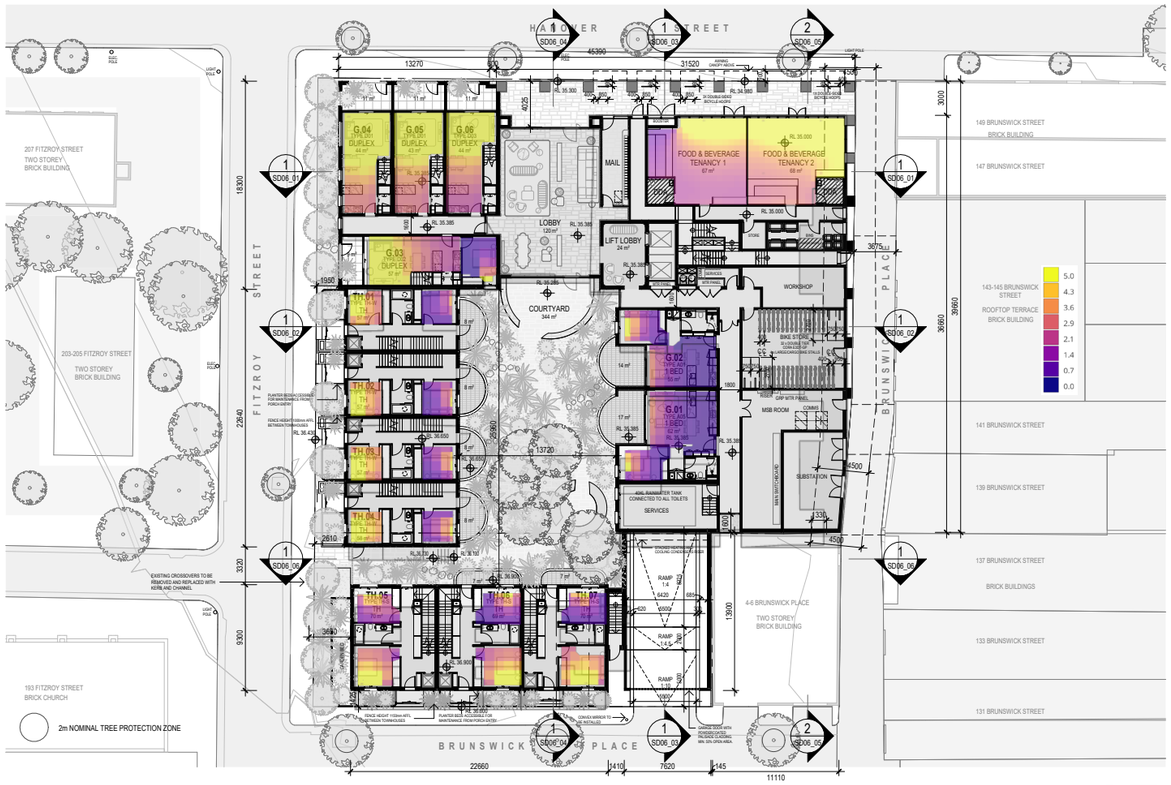
ZONE	TOTAL NOMINATED AREA (M²)	COMPLIANT AREA (M²)	COMPLIANT AREA (%)
1.01 Living	25	12	49
1.02 Living	26	17	66
1.03 Living	36	36	100
1.04 Living	31	28	89
1.05 Living	21	11	53
1.06 Living	28	28	100
1.07 Living	30	30	100
1.08 Living	30	30	100
1.09 Living	33	33	100
1.10 Living	26	12	49
2.01 Living	25	25	100
2.02 Living	26	26	100
2.03 Living	36	36	100
2.04 Living	31	31	100
2.05 Living	21	21	100
2.06 Living	28	28	100
2.07 Living	35	35	100
2.08 Living	39	39	100
2.09 Living	30	30	100
2.10 Living	30	30	100
2.11 Living	33	33	100

Daylight Assessment

ZONE	TOTAL NOMINATED AREA (M^2)	COMPLIANT AREA (M^2)	COMPLIANT AREA (%)
2.12 Living	26	26	100
3.01 Living	36	36	100
3.02 Living	35	32	92
3.03 Living	32	32	100
3.04 Living	22	22	100
3.05 Living	30	30	100
3.06 Living	36	36	100
3.07 Living	39	39	100
3.08 Living	30	30	100
3.09 Living	30	30	100
3.10 Living	33	33	100
4.01 Living	34	34	100
4.02 Living	45	45	100
4.04 Living	61	61	100
4.04 Living	49	49	100
4.05 Living	51	51	100
5.01 Living	34	34	100
5.02 Living	45	45	100
5.03 Living	49	49	100
5.04 Living	61	61	100
5.05 Living	43	43	100

ZONE	TOTAL NOMINATED AREA (M^2)	COMPLIANT AREA (M^2)	COMPLIANT AREA (%)
6.01 Living	34	34	100
6.02 Living	45	45	100
6.03 Living	49	49	100
6.04 Living	61	61	100
6.05 Living	43	43	100
7.01 Living	52	52	100
7.01 Rumpus	14	14	100
7.02 Living	35	35	100
7.03 Living	46	46	100
TOTAL	**2,391**	**2,287**	**96**

Daylight Assessment



Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	GROUND FLOOR PLAN	21725	SD02_03	01/05/2026	1 : 250 @ A3	A

SJB Architects
L5, 16 Oliver Lane
Melbourne VIC
3000 Australia
T 61 3 9938 0666
sjb.com.au

Ground Floor - Daylight Plot

Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	LEVEL 1 FLOOR PLAN	21725	SD02_04	01/05/2026	1 : 250 @ A3	A

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First Floor - Daylight Plot

Daylight Assessment

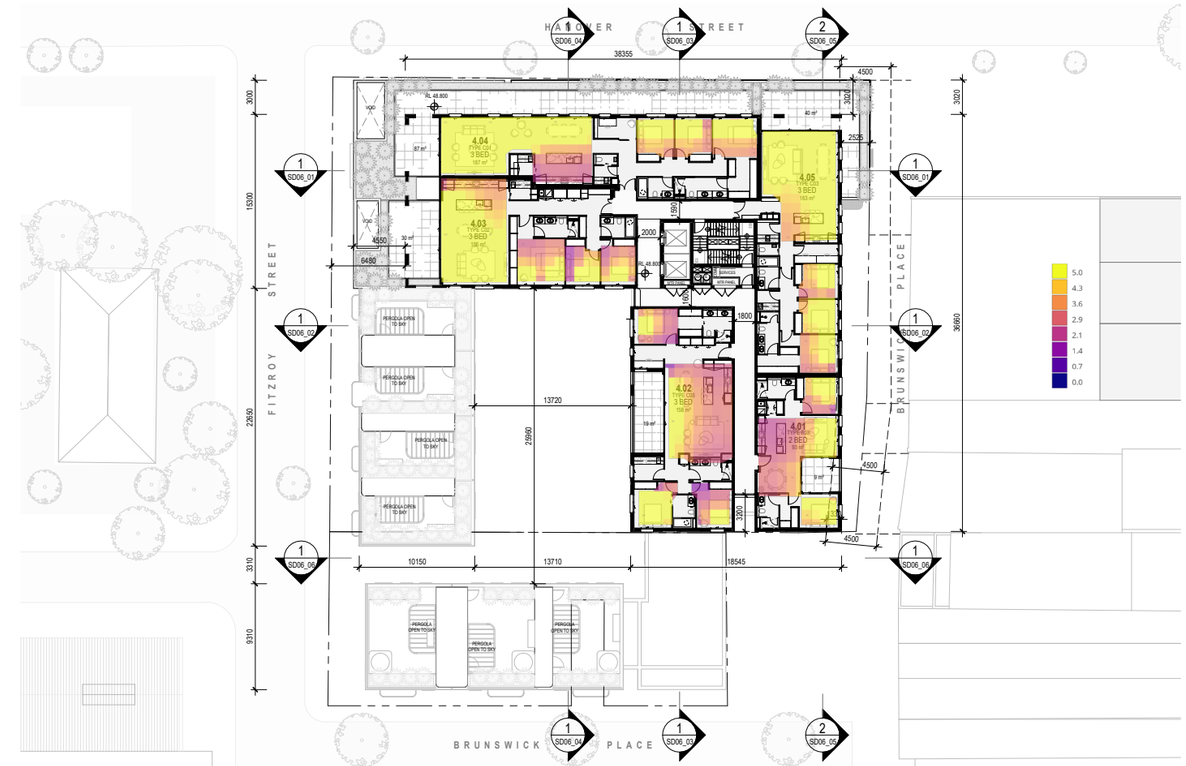
Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision	
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	LEVEL 2 FLOOR PLAN	21725	SD02_05	01/05/2026	1 : 250 @ A3	A	SJB Architects

Second Floor - Daylight Plot

Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision	
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	LEVEL 3 FLOOR PLAN	21725	SD02_06	01/05/2026	1 : 250 @ A3	A	SJB Architects

Third Floor - Daylight Plot

Daylight Assessment



Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	LEVEL 4 FLOOR PLAN	21725	SD02_07	01/05/2026	1 : 250 @ A3	A

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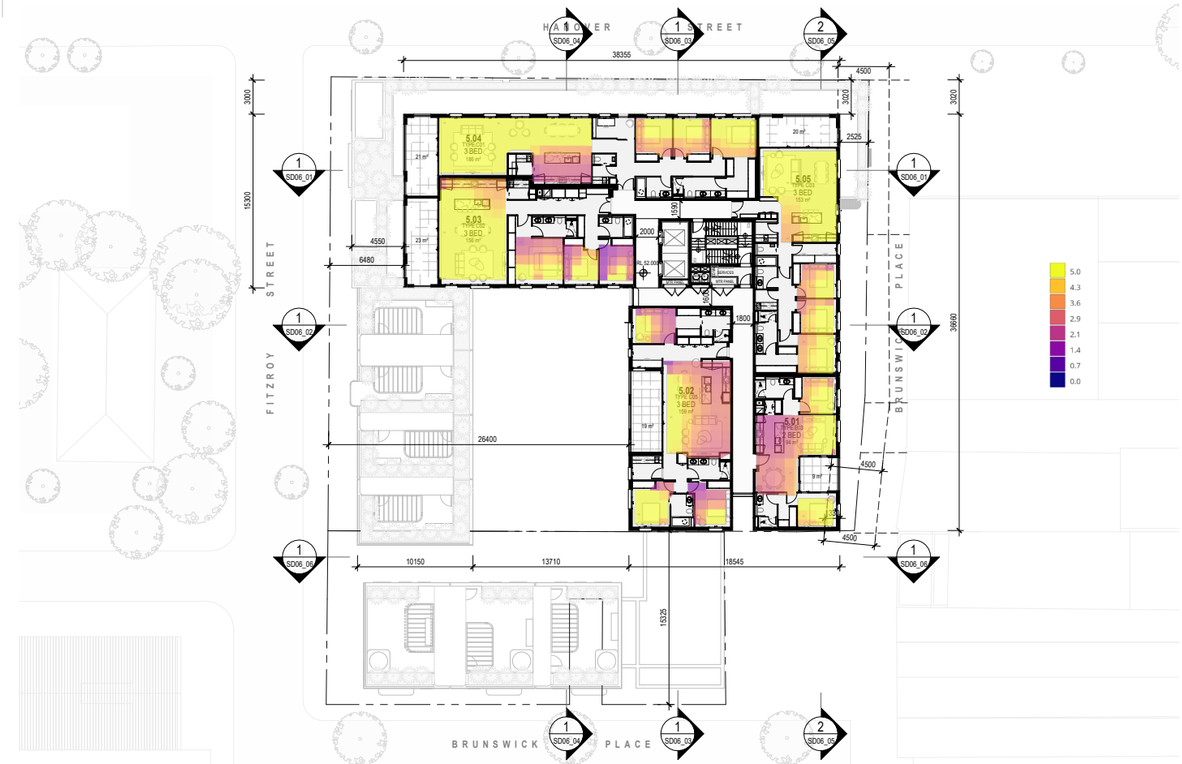

Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	LEVEL 5 FLOOR PLAN	21725	SD02_08	01/05/2026	1 : 250 @ A3	A

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Forth Floor - Daylight Plot

Fifth Floor - Daylight Plot

Daylight Assessment

Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	LEVEL 6 FLOOR PLAN	21725	SD02_09	01/05/2026	1 : 250 @ A3	A

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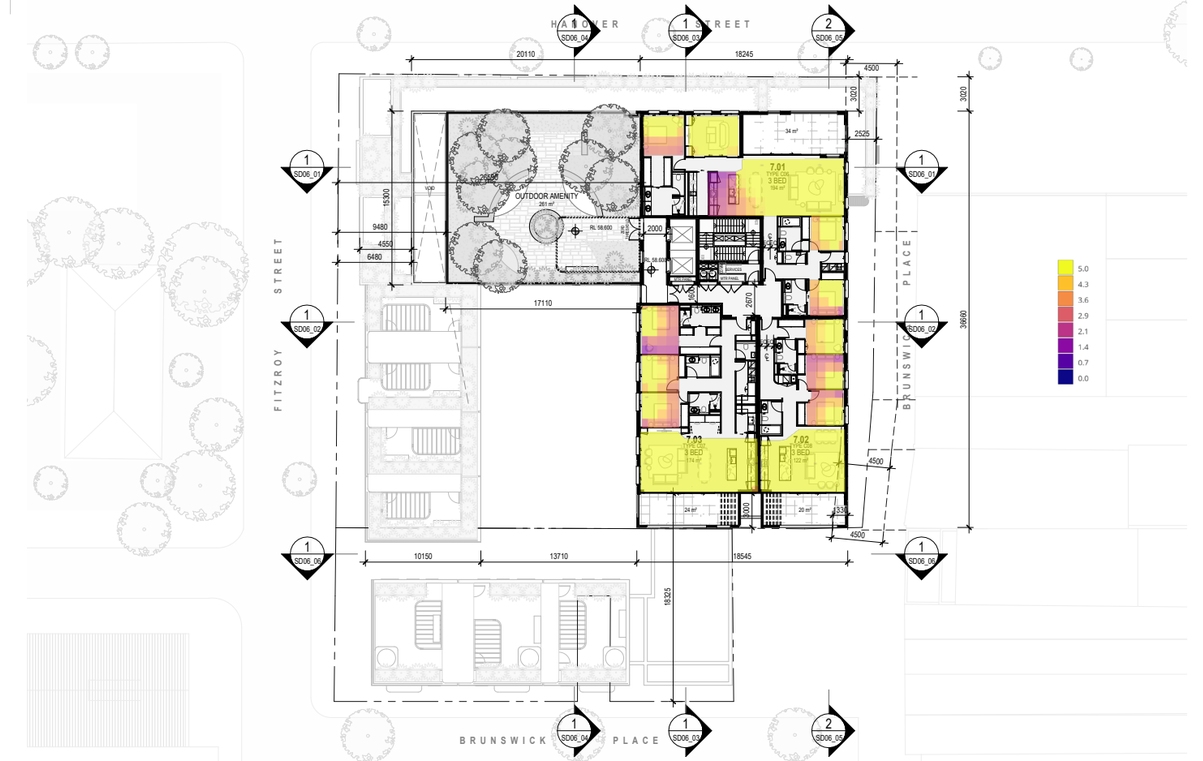

Client	Project	Drawing	Job No.	Drawing No.	Date	Scale	Revision
FOCUS GROUP	64-66 & 68-70 Hanover Street, Fitzroy	LEVEL 7 FLOOR PLAN	21725	SD02_10	01/05/2026	1 : 250 @ A3	A

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Sixth Floor - Daylight Plot

Seventh Floor - Daylight Plot

Appendix E: TVOC and Formaldehyde Emission Limits

TVOC and Formaldehyde Emission Limits

The following tables list the TVOC and Formaldehyde Emission Limits.

TOTAL VOLATILE ORGANIC COMPOUNDS

The following TVOC limits are applicable to all internal applications of all types of paints, adhesives or sealants applied on-site, including both exposed and concealed applications. If exterior grade products are used in an internal application then these must also meet the requirements.

PRODUCT TYPE	MAXIMUM TVOC CONTENT (G/L OF READY TO USE PRODUCT)
General purpose adhesive and sealants	50
Interior wall and ceiling paints, all sheen levels	16
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coatings for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealants, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

Further, carperts used in the project must either be:

- Certified under a recognised Product Certification Scheme (listed on the GBCA website) or other recognised standards; or
- Compliant with the Total VOC (TVOC) limits specified in the following table.

TEST PROTOCOL	MAXIMUM TVOC CONTENT (MG/M2 PER HOUR)
ASTM D5116 – Total VOC limit	0.5
ASTM D5116 – 4-PC (4 – Phenylcyclohexene)	0.05
ISO 16000 / EN 13419 – TVOC at three days	0.5
ISO 10580 / ISO/TC 219 (Document N238) – TVOC at 24 hours	0.5

TVOC and Formaldehyde Emission Limits

ENGINEERED WOOD PRODUCTS

The term “engineered wood products” includes composite wood products and includes raw/ unfinished as well as finished products. Items not covered by these limits include products used in exterior applications, formwork, internal car park applications, re-used products, and raw timber. All emission levels must be established by a NATA or ISO/IEC 17025 registered laboratory as per the testing methodologies in the table below.

TEST PROTOCOL	EMISSION LIMIT / UNIT OF MEASUREMENT
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1.0 mg/L
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.5 mg/L
AS/NZS 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.0 mg/L
AS/NZS 4357.4 – Laminated Veneer Lumber (LVL)	≤1.0 mg/L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1.0 mg/L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1.0 mg/L
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	≤1.0 mg/L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1 mg/ m^2hr
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1mg/m^2hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m^2hr (at 3 days)
ASTM D6007	≤0.12mg/m^3**
ASTM E1333	≤0.12mg/m^3***
EN 717-1 (also known as DIN EN 717-1)	≤0.12 mg/m^3
EN 717-2 (also known as DIN EN 717-2)	≤3.5 mg/m^2hr
**The test report must confirm that the conditions of this table comply for the particular wood product type, the final results must be presented in EN 717-1 equivalent (as presented in the table) using the correlation ratio of 0.98.	
*** The final results must be presented in EN 717-1 equivalent (as presented in the table), using the correlation ratio of 0.98.	

Appendix F: BESS Scorecard

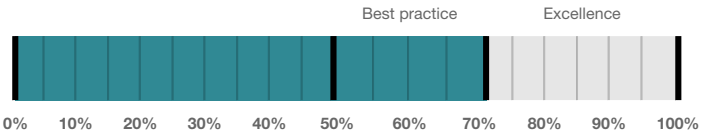
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 68-70 Hanover St Fitzroy Victoria 3065. 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 Yarra 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

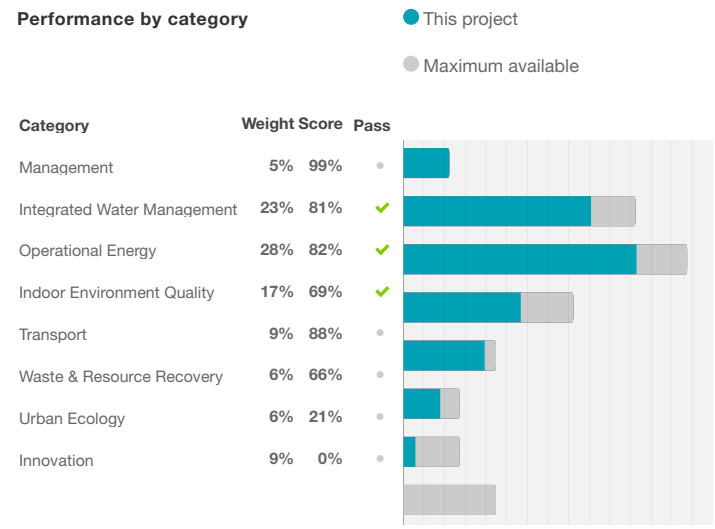


69%

Project details

Name	64-66 & 68-70 Hanover Street, Fitzroy
Address	68-70 Hanover Street, Fitzroy VIC 3065
Project ID	5FDCA113-R3
BESS Version	BESS-10
Date	04 May 2026
Software version	2.3.0-B.650
Site type	Mixed use development
Account	david@hipvhype.com
Application no.	
Site area	1,862 m²
Building floor area	7,340 m²

Performance by category



Project composition

Buildings

Name	Height	Footprint	% of total footprint
Hanover St	8	1,752 m²	100%

Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	Building	% of total area
Apartment				
3 Bed	17	163 m²	Hanover St	37%
2 Bed	21	93.0 m²	Hanover St	26%
1 Bed	14	63.0 m²	Hanover St	12%
TH - 3 Bed	4	171 m²	Hanover St	9%
TH - 4 Bed	3	210 m²	Hanover St	8%
Duplex	4	71.0 m²	Hanover St	3%
Total	**63**	**7,204 m²**	**98%**	

Non-Res Spaces

Name	Quantity	Area	Building	% of total area
Shop				
Retail	2	68.0 m²	Hanover St	1%
Total	**2**	**136 m²**	**1%**	

Supporting Evidence

Shown on Floor Plans

Credit	Requirement	Response	Status
Management 3.1	Annotation: Individual utility meters to be provided to all individual dwellings		-
Management 3.2	Annotation: Individual utility meters to be provided to all individual commercial tenancies		-
Management 3.3	Annotation: Sub-meters to be provided to all major common area services (list each)		-
Integrated Water Management 2.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Integrated Water Management 3.1	Annotation: Water efficient garden details		-
Operational Energy 3.1	Carpark with natural ventilation or CO monitoring system		-
Operational Energy 4.2	Location and size of solar photovoltaic system		-
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 1.4	Location of non-residential bicycle parking spaces		-
Transport 1.5	Location of non-residential visitor bicycle parking spaces		-
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 2.4	Location of taps and hose connections		-

Supporting Documentation

Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
Management 2.3a	Section J glazing assessment		-
Integrated Water Management 2.1	STORM report or MUSIC model		-
Operational Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
Operational Energy 3.1	Details of either the fully natural carpark ventilation or CO monitoring system proposed		-
Operational Energy 3.6	Average lighting power density and lighting type(s) to be used		-
Operational Energy 3.7	Average lighting power density and lighting type(s) to be used		-
Operational Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Indoor Environment Quality 1.1	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 1.2	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 1.4	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%

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

IWM Overall contribution 22.5%

	81%	✔ Pass
1.1 Potable Water Use	40%	✔ Achieved
2.1 Stormwater Treatment	100%	✔ Achieved
3.1 Water Efficient Landscaping	100%	
4.1 Building Systems Water Use	100%	

Operational Energy Overall contribution 27.5%

	Minimum required 50%	82%	Pass
1.1 Thermal Performance Rating - Non-Residential		37%	
1.2 Thermal Performance Rating - Residential		75%	Achieved
2.1 Greenhouse Gas Emissions		58%	
2.2 Peak Demand		100%	
2.6 Electrification		100%	
2.7 Energy consumption		100%	
3.1 Carpark Ventilation		100%	
3.2 Hot Water - Non-Residential		100%	
3.4 Clothes Drying		0%	
3.6 Internal Lighting - Apartments		100%	
3.7 Internal Lighting - Non-Residential		100%	
4.1 Combined Heat and Power (cogeneration / trigeneration)		N/A	Scoped Out
No cogeneration or trigeneration system in use.			
4.2 Renewable Energy Systems - Solar		98%	
4.4 Renewable Energy Systems - Other		N/A	Scoped Out
No other (non-solar PV) renewable energy is in use.			

IEQ Overall contribution 16.5%

	Minimum required 50%	69%	Pass
1.1 Daylight Access - Living Areas		66%	Achieved
1.2 Daylight Access - Bedrooms		66%	Achieved
1.3 Winter Sunlight		0%	
1.4 Daylight Access - Non-Residential		87%	Achieved
1.5 Daylight Access - Main Living Areas		N/A	Scoped Out
Spatial daylight autonomy metric not in use			
1.6 Daylight Access - Secondary Habitable Rooms		N/A	Scoped Out
Spatial daylight autonomy metric not in use			
2.1 Ventilation - Natural - Apartments		100%	
2.3 Ventilation - Non-Residential		50%	Achieved
3.4 Thermal comfort - Shading - Non-Residential		0%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential		0%	
4.1 Air Quality - Non-Residential		100%	

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%
1.4 Bicycle Parking - Non-Residential	100%
1.5 Bicycle Parking - Non-Residential Visitor	100%
1.6 End of Trip Facilities - Non-Residential	0%
2.1 Electric Vehicle Infrastructure	100%
2.2 Car Share Scheme	0%
2.3 Motorbikes / Mopeds	100%

Waste & Resource Recovery Overall contribution 5.5%

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

Urban Ecology Overall contribution 5.5%

	21%
1.1 Communal Spaces	98%
2.1 Vegetation	0%
2.2 Green Roofs	0%
2.3 Green Walls and Facades	0%
2.4 Balconies, Courtyards & Roof terraces	100%
3.1 Food Production - Residential	0%
3.2 Food Production - Non-Residential	0%

Innovation Overall contribution 9.0%

	0%
1.1 Innovation	0%

Credit breakdown

Management Overall contribution 4.5%

99%

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 24.5% towards the category score.	
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?	
Question	Criteria Achieved ?	
Apartment	Yes	
2.3 Thermal Performance Modelling - Non-Residential		50%
Score Contribution	This credit contributes 0.5% towards the category score.	
Criteria	Has a preliminary façade assessment been undertaken in accordance with NCC2022 Section J4D6?	
Question	Criteria Achieved ?	
Shop	Yes	
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2022 Section J (Energy Efficiency), NABERS or Green Star?	
Question	Criteria Achieved ?	
Shop	No	
3.1 Metering - Residential		100%
Score Contribution	This credit contributes 12.3% towards the category score.	
Criteria	Have utility meters been provided for all individual dwellings?	
Question	Criteria Achieved ?	
Apartment	Yes	
3.2 Metering - Non-Residential		100%
Score Contribution	This credit contributes 0.2% towards the category score.	
Criteria	Have utility meters been provided for all individual commercial tenants?	
Question	Criteria Achieved ?	
Shop	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
Shop	Yes

4.1 Building Users Guide	100%

Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	Yes

IWM Overall contribution 22.5%

81% ✔ 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?:	Blue Factor
Blue Factor score achieved?:	100
Flow:	-
Total Suspended Solids:	-
Total Phosphorus:	-
Total Nitrogen:	-

Rainwater tank profile

What is the total roof area connected to the rainwater tank?:	
Rainwater Tank	668 m²
	-
Tank Size:	
Rainwater Tank	40,000 Litres
	-
Irrigation area connected to tank:	
Rainwater Tank	
Is connected irrigation area a water efficient garden?:	
Rainwater Tank	No
	-
Other external water demand connected to tank?:	
Rainwater Tank	-
	-

Fixtures, fittings & connections profile

Building: All	Hanover St
Showerhead: All	4 Star WELS (>= 6.0 but <= 7.5)
Bath:	
Duplex Retail 1 Bed 2 Bed	Scope out
TH - 3 Bed TH - 4 Bed 3 Bed	Medium Sized Contemporary Bath
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 6 Star WELS rating
Dishwashers: All	>= 5 Star WELS rating
WC: All	>= 4 Star WELS rating

Urinals: All	Scope out
Washing Machine Water Efficiency: All	Occupant to Install
Which non-potable water source is the dwelling/space connected to?: All	Rainwater Tank
Non-potable water source connected to Toilets: All	Yes
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 — 40% ✔ Achieved

Score Contribution	This credit contributes 31.2% 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	10382 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	8130 kL
Output	Proposed (including rainwater and recycled water use)
Project	7715 kL
Output	% Reduction in Potable Water Consumption
Project	25 %
Output	% of connected demand met by rainwater
Project	42 %
Output	How often does the tank overflow?
Project	Never / Rarely
Output	Opportunity for additional rainwater connection
Project	3876 kL

2.1 Stormwater Treatment — 100% ✔ Achieved

Score Contribution	This credit contributes 56.2% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?

3.1 Water Efficient Landscaping — 100%

Score Contribution	This credit contributes 6.2% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes

4.1 Building Systems Water Use — 100%

Score Contribution	This credit contributes 6.2% 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%	82%	✔ Pass

Project profile	
Use the BESS Deem to Satisfy (DtS) method for Non-residential spaces?:	Yes
Are you installing any renewable energy system(s) (other than solar photovoltaic)?:	No
Energy Supply:	All-electric
Solar Photovoltaic system profile	
System Size (lesser of inverter and panel capacity): PV Array	40.0 kW peak
Orientation (which way is the system facing)?: PV Array	North
Inclination (angle from horizontal): PV Array	10.0 Angle (degrees)
Which Building Class does this apply to?: PV Array	Apartment
Dwellings profile	
Building: All	Hanover St
Below the floor is:	
Duplex TH - 3 Bed TH - 4 Bed 1 Bed	Ground or Carpark
2 Bed 3 Bed	Another Occupancy
Above the ceiling is:	
Duplex 1 Bed 2 Bed 3 Bed	Another Occupancy
TH - 3 Bed TH - 4 Bed	Outside
Exposed sides: All	1
NatHERS Annual Energy Loads - Heat:	
Duplex	38.9 MJ/sqm
TH - 3 Bed	27.5 MJ/sqm
TH - 4 Bed	44.5 MJ/sqm
1 Bed	25.4 MJ/sqm
2 Bed	30.1 MJ/sqm
3 Bed	29.0 MJ/sqm
NatHERS Annual Energy Loads - Cool:	
Duplex	27.6 MJ/sqm
TH - 3 Bed 2 Bed	9.7 MJ/sqm
TH - 4 Bed	7.2 MJ/sqm
1 Bed	13.0 MJ/sqm
3 Bed	12.7 MJ/sqm

NatHERS star rating:	
Duplex	6.8
TH - 3 Bed 1 Bed	8.3
TH - 4 Bed	7.5
2 Bed	8.2
3 Bed	8.1
Type of Heating System: All	Reverse cycle space
Heating System Efficiency: All	3 Stars (2019 MEPS)
Type of Cooling System: All	Refrigerative space
Cooling System Efficiency: All	3 Stars (2019 MEPS)
Type of Hot Water System: All	Electric Heat Pump Band 1
Is the hot water system shared by multiple dwellings?:	
Duplex 1 Bed 2 Bed 3 Bed	Yes
TH - 3 Bed TH - 4 Bed	N/A
% Contribution from solar hot water system: All	0 %
Clothes Line: All	No drying facilities
Clothes Dryer: All	Occupant to install
Non-residential Deemed-to-Satisfy profile	
Do all exposed floors and ceilings forming part of the envelope demonstrate a minimum 10% improvement in required NCC2022 insulation levels (total R-value upwards and downwards)?:	Yes
Does all wall and glazing demonstrate meeting the required NCC2022 facade calculator (or better than the total allowance)?:	Yes
Are heating and cooling systems within one Star of the most efficient equivalent capacity unit available, or Coefficient of Performance (CoP) & Energy Efficiency Ratios (EER) not less than 85% of the CoP & EER of the most efficient equivalent capacity unit available?:	Yes
Are water heating systems within one star of the best available, or 85% or better than the most efficient equivalent capacity unit?:	Yes

1.1 Thermal Performance Rating - Non-Residential		37%
Score Contribution	This credit contributes 0.9% towards the category score.	
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC2022 Section J)?	
1.2 Thermal Performance Rating - Residential		75% ✔ Achieved

Score Contribution	This credit contributes 17.2% 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	58%

Score Contribution	This credit contributes 17.4% 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	131,533 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	116,320 kg CO2
Output	% Reduction in GHG Emissions
Apartment	11 %

2.2 Peak Demand	100%

Score Contribution	This credit contributes 0.1% towards the category score.
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?

2.6 Electrification	100%

Score Contribution	This credit contributes 11.5% 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 21.4% towards the category score.
Criteria	What is the % reduction in annual energy consumption against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Apartment	1,274,014 MJ
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	536,863 MJ
Output	% Reduction in total energy
Apartment	57 %

3.1 Carpark Ventilation	100%

Score Contribution	This credit contributes 5.8% towards the category score.
Criteria	If you have an enclosed carpark, is it: (a) fully naturally ventilated (no mechanical ventilation system) or (b) 40 car spaces or less with Carbon Monoxide monitoring to control the operation and speed of the ventilation fans?
Question	Criteria Achieved ?
Project	Yes

3.2 Hot Water - Non-Residential	100%

Score Contribution	This credit contributes 0.1% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?

3.4 Clothes Drying	0%

Score Contribution	This credit contributes 5.7% 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	30,455 kWh
Output	Proposed
Apartment	30,455 kWh
Output	Improvement
Apartment	0 %

3.6 Internal Lighting - Apartments	100%

Score Contribution	This credit contributes 5.7% towards the category score.
Criteria	Is the maximum illumination power density (W/m2) in at least 90% of the relevant building class at least 20% lower than required by clause J7D3(1)(a) and Table J6.2a of the NCC 2022 Vol 1 (Class 2-9)?
Question	Criteria Achieved ?
Apartment	Yes

3.7 Internal Lighting - Non-Residential	100%

Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	Does the maximum illumination power density (W/m2) in at least 90% of the area of the relevant building class meet the requirements in Table J7D3a of the NCC 2022 Vol 1?
Question	Criteria Achieved ?
Shop	Yes

4.1 Combined Heat and Power (cogeneration / trigeneration)	N/A Scoped Out
	No cogeneration or trigeneration system in use.

This credit was scoped out	No cogeneration or trigeneration system in use.

4.2 Renewable Energy Systems - Solar	98%

Score Contribution	This credit contributes 5.8% 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	48,473 kWh
Output	% of Building's Energy
Apartment	32 %

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

This credit was scoped out	No other (non-solar PV) renewable energy is in use.

IEQ Overall contribution 16.5%

Minimum required 50% | 69% | ✔ Pass

What metric do you want to use for daylight to apartments?:	Daylight factor
Daylight Factor: use the BESS Deemed to Satisfy (DtS) method?:	No
Daylight Factor: what calculation approach do you want to use?:	Provide our own calculations

1.1 Daylight Access - Living Areas — 66% ✔ Achieved

Score Contribution	This credit contributes 29.1% towards the category score.
Criteria	What % of living areas achieve the daylight criteria?
Question	Percentage Achieved ?
Apartment	96 %

1.2 Daylight Access - Bedrooms — 66% ✔ Achieved

Score Contribution	This credit contributes 29.1% towards the category score.
Criteria	What % of bedrooms achieve the daylight criteria?
Question	Percentage Achieved ?
Apartment	99 %

1.3 Winter Sunlight — 0%

Score Contribution	This credit contributes 9.7% towards the category score.
Criteria	Do 70% of dwellings receive at least 3 hours of direct sunlight in all Living areas between 9am and 3pm in mid-Winter?
Question	Criteria Achieved ?
Apartment	No

1.4 Daylight Access - Non-Residential — 87% ✔ Achieved

Score Contribution	This credit contributes 1.1% towards the category score.
Criteria	What % of the nominated floor area has at least 2% daylight factor?
Question	Percentage Achieved?
Shop	87 %

1.5 Daylight Access - Main Living Areas — N/A ✧ Scoped Out

Spatial daylight autonomy metric not in use

This credit was scoped out	Spatial daylight autonomy metric not in use

1.6 Daylight Access - Secondary Habitable Rooms — N/A ✧ Scoped Out

Spatial daylight autonomy metric not in use

This credit was scoped out	Spatial daylight autonomy metric not in use

2.1 Ventilation - Natural - Apartments — 100%

Score Contribution	This credit contributes 29.1% towards the category score.
Criteria	What % of dwellings are effectively naturally ventilated?
Question	Percentage Achieved?
Apartment	100 %

2.3 Ventilation - Non-Residential	50% ✔ Achieved

Score Contribution	This credit contributes 1.1% towards the category score.

Criteria	What % of the regular use areas are effectively naturally ventilated?
Question	Percentage Achieved?
Shop	-

Criteria	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012?
Question	Percentage Achieved?
Shop	100 %

Criteria	What CO_2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?
Question	Value
Shop	-

3.4 Thermal comfort - Shading - Non-Residential	0%

Score Contribution	This credit contributes 0.2% towards the category score.

Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?
Question	Percentage Achieved?
Shop	-

3.5 Thermal Comfort - Ceiling Fans - Non-Residential	0%

Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	What percentage of regular use areas in tenancies have ceiling fans?
Question	Percentage Achieved?
Shop	-

4.1 Air Quality - Non-Residential	100%

Score Contribution	This credit contributes 0.2% towards the category score.

Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Shop	Yes

Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Shop	Yes

Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Shop	Yes

Transport Overall contribution 9.0%

88%

1.1 Bicycle Parking - Residential	100%
Score Contribution	This credit contributes 21.9% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there for residents?
Question	Bicycle Spaces Provided ?
Apartment	70
Output	Min Bicycle Spaces Required
Apartment	63

1.2 Bicycle Parking - Residential Visitor	100%
Score Contribution	This credit contributes 21.9% towards the category score.
Criteria	How many secure bicycle spaces are there for visitors?
Question	Visitor Bicycle Spaces Provided ?
Apartment	15
Output	Min Visitor Bicycle Spaces Required
Apartment	13

1.3 Bicycle Parking - Convenient Residential	100%
Score Contribution	This credit contributes 0.1% towards the category score.
Criteria	Are bike parking facilities for residents located at ground or entry level?
Question	Criteria Achieved ?
Apartment	Yes

1.4 Bicycle Parking - Non-Residential	100%
Score Contribution	This credit contributes 0.1% towards the category score.
Criteria	Have the planning scheme requirements for employee bicycle parking been exceeded by at least 50% (or a minimum of 2 where there is no planning scheme requirement)?
Question	Criteria Achieved ?
Shop	Yes
Question	Bicycle Spaces Provided ?
Shop	2

1.5 Bicycle Parking - Non-Residential Visitor	100%
Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	Have the planning scheme requirements for visitor bicycle parking been exceeded by at least 50% (or a minimum of 1 where there is no planning scheme requirement)?
Question	Criteria Achieved ?
Shop	Yes
Question	Bicycle Spaces Provided ?
Shop	1

1.6 End of Trip Facilities - Non-Residential	0%

Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	Where adequate bicycle parking has been provided. Is there also: * 1 shower for the first 5 employee bicycle spaces plus 1 to each 10 employee bicycles spaces thereafter, * changing facilities adjacent to showers, and * one secure locker per employee bicycle space in the vicinity of the changing / shower facilities?
Question	Number of showers provided ?
Shop	0
Question	Number of lockers provided ?
Shop	0
Output	Min Showers Required
Shop	1
Output	Min Lockers Required
Shop	2

2.1 Electric Vehicle Infrastructure	100%
Score Contribution	This credit contributes 22.3% 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%

	21%

1.1 Communal Spaces	98%
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	120 m²
Shop	0.0 m²
Output	Minimum Common Space Required
Apartment	103 m²
Shop	13 m²
2.1 Vegetation	0%
Score Contribution	This credit contributes 44.5% 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	-
2.2 Green Roofs	0%
Score Contribution	This credit contributes 0% towards the category score.
Criteria	Does the development incorporate a green roof?
Question	Criteria Achieved ?
Project	No
2.3 Green Walls and Facades	0%
Score Contribution	This credit contributes 11.1% 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 10.9% 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 10.9% towards the category score.
Criteria	What area of space per resident is dedicated to food production?
Question	Food Production Area
Apartment	0.0 m²
Output	Min Food Production Area
Apartment	40 m²

3.2 Food Production - Non-Residential	0%

Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	What area of space per occupant is dedicated to food production?
Question	Food Production Area
Shop	-

Innovation Overall contribution 9.0%

	0%

1.1 Innovation	0%
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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For additional information, questions unturned, collaboration opportunities and project enquiries please get in touch.

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