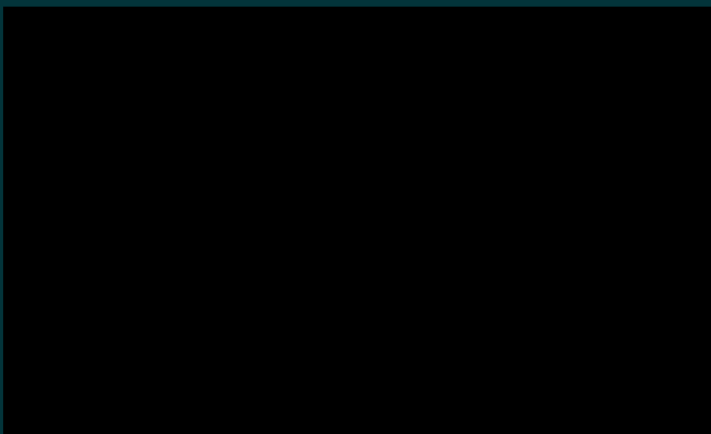


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Sustainability Management Plan

9 Brown Street,
Portarlington

15/04/2026



Sustainability Management Plan (SMP)

Proposed Mixed-use (Apartment + Commercial) Development

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DOCUMENT VERSION

Version	Date	Changelog	Author	Review
0	04/08/22	Amended as per latest design – FCS 46545	BM	DM
1	08/08/23	Updated as per the latest Design - FCS 53092	WZ	DG
2	17/04/24	Updated as per drawings dated 15/03/24 (FCS 58109)	PS	-
3	19/04/24	Updated as per client's comment (FCS 58109)	PS	-
4	19/12/25	Updated as per the latest design (FCS 67935)	JC	-
5	15/04/26	Cooling load reference updated (FCS 67935)	JC	-

INITIATIVES TO BE MARKED ON DRAWINGS

Water & Stormwater Management

Mark-up showing the roof catchment area to be diverted to the Rainwater tank
Location and size of the Rainwater tank proposed
Note showing the connection to the toilets for all apartments
Note showing WELS rating for water fittings/fixtures (refer to report) – Fixtures (e.g. dishwasher) provided as part of base building work have to be chosen within one WELS star of the best available at the time of purchase.
Commitment to reduce potable (mains) water consumption from fire testing and building systems (HVAC) by **at least 80%** by collecting and recycling.

Energy Efficiency

Note showing commitment to exceeding the section J energy efficiency requirement of NCC 2019
Commitment to a 6.5 Star average energy rating for the development (on planning and construction drawings)
Note showing the maximum illumination power density (W/m^2) of the commercial space to meet the NCC 2019 requirements
Lighting sensors for external lighting (motion detectors, timers etc.)
CO sensors for car park ventilation
6 kW Solar PV system on the roof of the development

Indoor Environment Quality

Glazing in apartments to have a minimum VLT of 70%
Note showing commitment to Outside Air Fan in Retail spaces, providing O/A rates 50% above minimum from AS1668 or O/A provision to ensure CO₂ concentration remains below 800ppm

Transport

Bike space location provided on ground floor
Minimum one EV charging in the carpark for the development (minimum Level 2 – 32amp)

Waste

Three-bin system including rubbish, recycling and organic/garden waste

INTRODUCTION

[REDACTED] has been engaged to undertake a Sustainability Management Plan for the proposed mixed-use development located at 9 Brown Street, Portarlington. This has been prepared to address Greater Geelong City Council's Planning Policy Clause 15.01-2L Environmentally Sustainable Development.

Within Clause 15.01-2L, Greater Geelong City Council has identified the following key categories to be addressed:

- Energy Performance;
- Water Resources;
- Stormwater Management;
- Indoor Environment Quality;
- Building Materials;
- Construction, Building & Waste Management;
- Transport; and
- Urban Ecology.

The site has been assessed using the BESS tool. BESS was developed by association of councils led by Merri-bek City Council. This tool assesses the energy and water efficiency, thermal comfort and overall environmental sustainability performance of new buildings or alterations. It was created to demonstrate how new development can meet sustainability requirements as part of a planning permit application for the participating council.

Each target area within the BESS tool generally receives a score of between 1% and 100%. A minimum score of 50% is required for the energy, water, stormwater and IEQ areas. An overall score of 50% represents 'Best Practice' while a score over 70% represent 'Excellence'. The results of the BESS assessment are included in Appendix E.

The Stormwater Treatment Objective – Relative Measure BlueFactor, which addresses stormwater quality considerations, has been used in the development process to ensure that stormwater management best-practice requirements are met. The result of the BlueFactor assessment is included in Appendix A.



SITE DESCRIPTION

The proposed site is located at 9 Brown Street, Portarlington. The 1,011.7m². The site is currently occupied by a single-storey development, which is proposed to be demolished prior to construction. It is located in a mixed-use area approximately 30 kms east of the Geelong CBD.

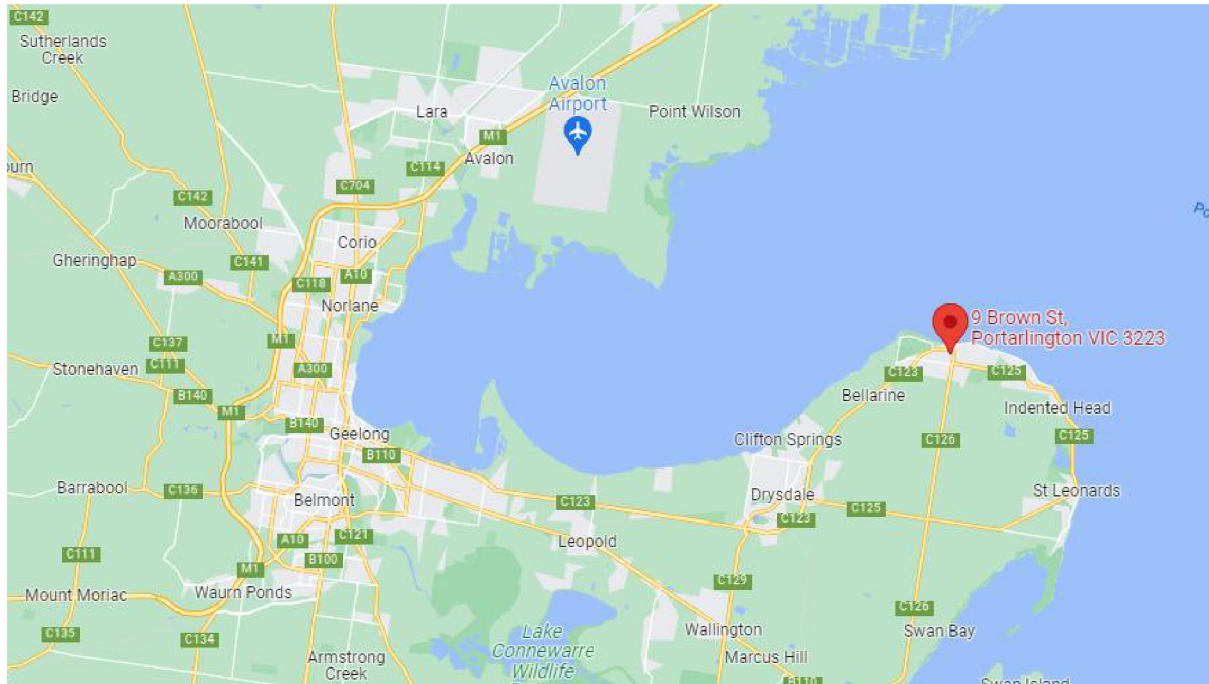


Figure 1: Location of the proposed development in Portarlington with relation to Geelong CBD (Source: Google Maps)

PROPOSED DEVELOPMENT

The proposal involves developing the site into a three-storey multi-unit development with 10 apartments (4 x 2-bedroom and 6 x 3-bedroom) and three commercial spaces on the ground floor. The development includes parking for residents, a bin room, service rooms, bicycle spaces and storage spaces on ground level. The site area is approximately 1,011.7 m².

ENERGY EFFICIENCY

Energy and its key elements should be integrated into the design of the proposed development. These elements contribute to reducing greenhouse gas emissions by utilising energy-efficient appliances, energy conservation measures and renewable energy.

FirstRate5 Energy Rating Residential Spaces

Energy ratings will be completed at the building approval stage. A commitment is made that all apartments will meet the energy-efficiency requirement of a minimum 6.5-Star average energy rating, with no individual apartment scoring below 6.0 Stars. For the BESS assessment, a 6.5-star average result has been assumed, with a **minimum cooling load of 19 MJ/m²per annum.**

Energy Efficiency Commercial Space

During the building construction stage of the project, a section J (NCC 2019) DTS assessment will occur with the following commitments:

- Wall and glazing performance to be in line with DTS requirements. The glazing used for retail areas will be classified as Display Glazing and therefore will not require a façade calculation.
- Heating/cooling system to be chosen within one star of the best available product in the range at the time of purchase, or COP/EER 85% or better than the most efficient equivalent capacity unit available if no star rating is available: and
- Water heating system to be chosen within one star of the best available product in the range at the time of purchase, or 85% or better than the most efficient equivalent capacity unit available if no star rating is available.

Alternatively, during the construction stage of the project, energy modelling will be undertaken, aiming to exceed the requirements of NCC 2019, using an NCC JV3 modelling process. This will be achieved using high-performance building fabrics and glazing, low-energy lighting and building services.

Please note that a preliminary JV3 assessment cannot be provided as the required information to prepare it (sections, elevations, RCPs, etc.) is not available. As soon as working drawings are available, and before commencement of construction, a JV3 modelling report will be prepared to demonstrate compliance with the NCC 2019 requirements. Solar panel and other commitments in this report will help achieve this commitment.

Heating and Cooling Systems

To reduce energy consumption, heating and cooling will be provided by energy-efficient air conditioners (the heating and cooling system will meet the minimum 4-star requirement or have a COP/EER of 85% or better than the most efficient equivalent-capacity unit available if no star rating is available).

Hot Water Heating

Hot water will be provided with a gas instantaneous system chosen within one star of the best available at the time of purchase (minimum of 6 Stars)

Lighting

The maximum illumination power density (W/m^2) in apartments will be reduced by 20% compared with NCC 2019 requirements through the use of LED lighting. Lighting levels will not exceed $4 \text{ W}/\text{m}^2$ for all apartments.

The maximum illumination power density (W/m^2) in the commercial space will meet the NCC 2019 requirements using LED.

Common, external, service areas lighting will be controlled using occupancy sensors and/or daylight sensors. Ventilation in these areas will be controlled using timers and other sensors.

Car Park Ventilation

Enclosed car park ventilation will be designed to meet best-practice energy-efficiency standards, with exhaust fans equipped with CO sensors that operate only when required.

Energy Efficient Appliances

All appliances provided in the development as part of the base building work (e.g. dishwasher) will be chosen within one energy efficiency star of the best available.

Variable Speed Drives

Variable speed drives will be installed on all major pumps and fans to reduce energy consumption.

Solar PV System

A 6-kW solar photovoltaic system for renewable energy generation will be installed on the roof of the development. This will offset a large portion of greenhouse gas emissions and energy use for the project (lighting, pumps, fans, etc.).

WATER EFFICIENCY & STORMWATER MANAGEMENT

Water saving, use, and reuse, and their key elements, should be integrated into the design of the proposed development. These principles help reduce water demand and promote water reuse. Stormwater management and its key elements should be integrated into the design of the proposed development. These principles help ensure that natural systems are protected and enhanced whilst promoting on-site retention and reducing runoff or peak flows.

Water Efficient Fittings

The development (apartment and commercial) will include efficient fittings and fixtures to reduce the volume of mains water used. The following WELS star ratings will be specified;

- Toilets – 4 Star;
- Taps (bathroom and kitchen) – 5 Star; and
- Showerhead if provided – 4 Star with aeration device (6.0-7.5L/min).

Rainwater Collection & Use

Rainwater runoff from the roof areas of the development will be collected and stored in rainwater tanks¹ with a total effective capacity of 20,000L.

Rainwater collected will be used for toilet flushing in all apartments. These initiatives will significantly reduce the stormwater impacts of the development and help achieve compliance with the Blue Factor calculator (See Appendix A).

Water Efficient Appliances

All appliances provided in the development as part of the base building work (e.g. dishwasher) will be chosen within one WELS star of the best available.

Water Efficient Landscaping

Native or drought-tolerant plants will be implemented for the landscaped areas on site. Water-efficient irrigation will be incorporated.

Building System Water

Potable (mains) water consumption from fire testing will be **reduced by at least 80%** by collecting and recycling. This requirement will need to be clearly integrated into the services' design. Building air-conditioning will not use potable water for cooling.

¹ Please note that any stormwater detention volume requirement for the site will be in addition to the proposed rainwater retention and that the proposed tank will not be directly topped up by mains water.

INDOOR ENVIRONMENT QUALITY

Indoor Environment Quality and its key elements should be integrated into the design of the proposed development. These elements play a significant role in the health, well-being, and satisfaction of the development occupants. Facilitating a good (IEQ) design provides a naturally comfortable indoor environment and less dependence on building services such as artificial lighting, mechanical ventilation and heating and cooling devices.

Volatile Organic Compounds

All paints, adhesives, sealants and flooring will have low VOC content. Alternatively, products will be selected with no VOCs. Paints such as eColour, or equivalent, should be considered. Please refer to Appendix D for VOC limits.

Formaldehyde Minimisation

All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better. Alternatively, products will be specified as free of formaldehyde. Products such as ecological panel – 100% post-consumer recycled wood (or similar) will be considered for use within the development. Please refer to Appendix D for formaldehyde limits.

Daylight Levels-Residential Space

Daylight penetration will be enhanced with the use of light internal colours to improve daylight reflection. All living/kitchen areas have limited room depth, allowing for good daylight access. All bedrooms will have access to a window (outside or light court), so no bedroom will rely on borrowed daylight. Installing mirrored wardrobe doors could further improve daylight distribution within the bedrooms.

All glazing serving these rooms will have a minimum Visual Light Transmittance (VLT) of 70%. All rooms with glazing comply with the *BESS building separation table*.

Daylight access has been assessed using the BESS daylight built-in calculator and BESS DTS criteria. Please refer to Appendix E for residential daylight calculations in BESS.

Daylight Levels-Commercial space

Daylight entering commercial spaces through windows and openings will be enhanced by using light internal colours, allowing better daylight reflection. The commercial space will have large glazing to allow good daylight penetration. The commercial space will achieve good daylight amenities. **Please refer to Appendix C for the daylight Hand Calculation demonstrating compliance with best-practice requirements.**

Task Lighting

A higher illuminance level (300Lux) will be provided for all task areas (e.g. kitchen bench, bathroom basin) to ensure appropriate light is provided to do any tasks in these areas.

Ventilation (Residential)

All kitchens will have a dedicated exhaust fan (range hood) that vents directly outside the building.

External windows in apartments typically include an operable component. This will help introduce fresh air to the residents and, when weather conditions are suitable, reduce the need for mechanical cooling. Window locks and door catches will be included to encourage and improve natural ventilation in the apartments.

Most apartments (more than 60%) will have access to effective cross-flow ventilation with the implementation of windows in opposing or adjacent walls. Window locks and door catches will be included to encourage and improve natural ventilation in the apartments.

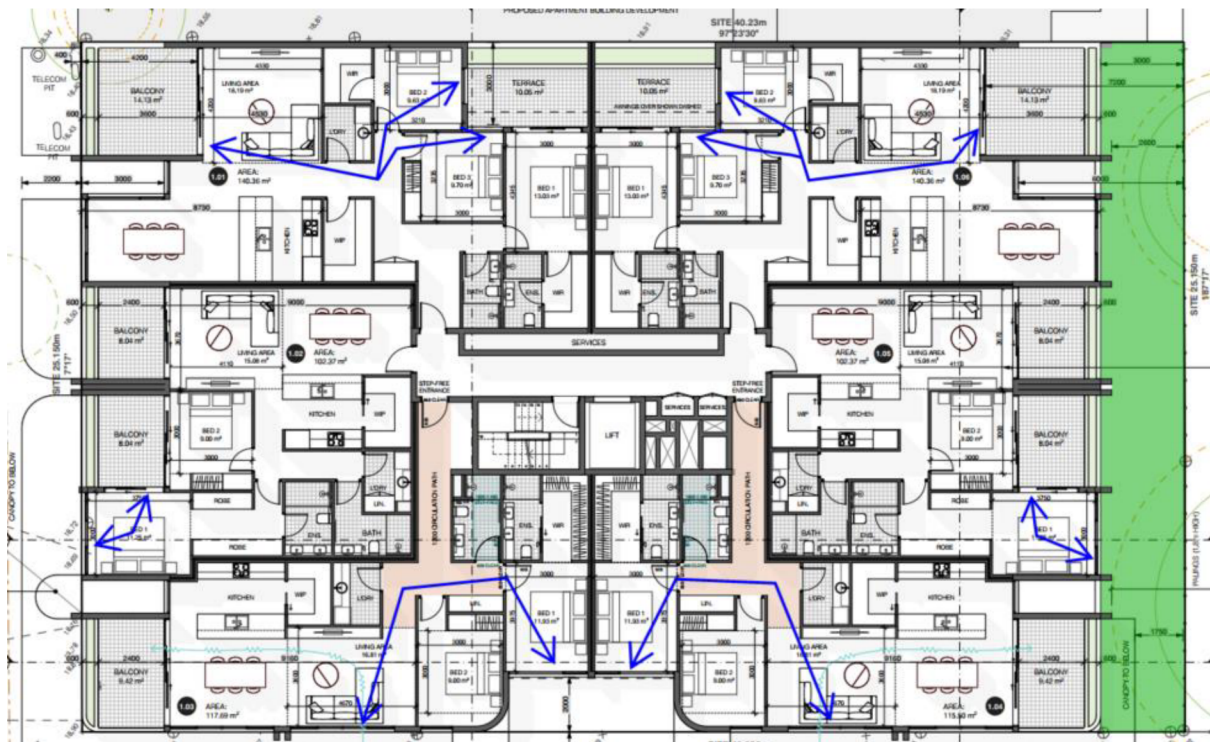


Figure 2: natural ventilation path for level 1



Figure 3: natural ventilation path for level 2

Mechanical Ventilation – Improved Outside Air Rates (Non-residential)

All Retail spaces will be provided with O/A fans, with a commitment to provide a 50% increase in O/A provision relative to AS1668.

Alternatively, O/A will be provided in the office spaces to ensure that CO₂ concentration in the rooms remains below 800ppm.

CONSTRUCTION, BUILDING & WASTE MANAGEMENT

Building Management and its key elements should be integrated into the design of the proposed development. These principles contribute to ensuring efficient and effective ongoing building performance. Waste management and its key elements should be integrated into the design of the proposed development. These principles contribute to ensuring minimal waste is transported to landfill by means of disposal, recycling and on-site waste storage and/or collection methods.

Metering / Monitoring / Tuning

Each major common energy (air-conditioning, lighting, water heating) and water use (rainwater reuse, hot and cold water) within the proposed development will be separately metered and monitored.

Each apartment and the commercial space will be separately metered for potable water and energy. Effective metering ensures that residents/tenants are responsible for their consumption, and they can reduce their consumption.

Construction Waste Management

A waste management plan will be introduced to all on-site staff at a site orientation session to ensure that the waste generated on-site is minimised and disposed of correctly. A minimum 80% of all construction waste generated on site will be reused or recycled.

Construction Environmental Management

The builder will identify environmental risks related to construction and include management strategies, such as maintaining effective erosion and sediment control measures during construction and operation, and ensuring appropriate earthworks staging (e.g., avoiding bare earthworks in high-risk areas of the site during the dominant rainfall period).

Operational Waste

The development will include a central waste storage room on the ground floor. The waste storage room will consist of facilities for organic, non-organic, and recyclable waste, as well as hard rubbish. Recycle bins will be provided next to general waste bins in kitchens. Please refer to the Waste Management Plan for further details.



Figure 4: Examples of kitchen receptacles for general waste and recycling.

TRANSPORT

Bicycle Parking

Residents and tenants will be able to securely park their bicycles in the dedicated 13 bicycle storage areas provided on the ground floor, and 4 bicycle racks will be provided on the ground floor for visitors. These will be protected from the weather and theft.

Electric Vehicle Car Charging Infrastructure

At least one charging infrastructure (minimum Level 2 – 32amp) for electric vehicles will be provided in the car park.

BUILDING MATERIALS

Materials selection should be integrated into the design of the proposed development. The criteria for appropriate materials used are based on economic and environmental costs.

Timber

All timber used in the development will be Forest Stewardship Council (FSC) or Program for the Endorsement of Forest Certification (PEFC) certified, or recycled / reused.

Flooring

The use of timber flooring will be preferred for all living areas and bedrooms. All flooring will be selected from products/materials certified under any of the following:

- Carpet Institute of Australia Limited, Environmental Certification Scheme (ECS) v1.2;
- Ecospecifier GreenTag GreenRate V3.2; and/or
- Good Environmental Choice (GECA).

Alternatively, flooring must be durable, include some eco-preferred content, be modular and/or come from a manufacturer with a product stewardship program and ISO 14001 certification.

Joinery

All joinery will be manufactured from materials/products certified under any of the following:

- Ecospecifier GreenTag GreenRate V3.1;
- Good Environmental Choice (GECA); and/or
- The Institute for Market Transformation to Sustainability (MTS) Sustainable Materials Rating Technology standard Version 4.0 – SmaRT 4.0.

The use of Ecological Panel (or equivalent) will be investigated, which is created from 100% post-consumer recycled products.

Non-toxic and Durable External Materials

All external materials used to construct the building will be long-lasting and will be non-toxic.

SCM Concrete

Wherever possible, Supplementary Cementing Material (SCM) is encouraged as a partial substitution for Portland cement. A minimum of 20% of cement should be replaced with SCM. Typical examples are fly ashes, slag cement (ground, granulated blast-furnace slag), and silica fume. The use of SCM will help reduce the environmental impact of the project by reducing GHS emissions.

The implementation is subject to structural engineer or relevant professional's approval. Further information can be found at <http://www.hanson.com.au/Products/Concrete/Green-Concrete>.

Steel

Wherever possible, steel for the development will be sourced from a Responsible Steel Maker². Reinforcing steel for the project will be manufactured using energy reducing processes commonly used by large manufacturers such as Bluescope or OneSteel.



² A Responsible Steel Maker must have facilities with a currently valid and certified ISO 14001 Environmental Management System (EMS) in place, and be a member of the World Steel Association's (WSA) Climate Action Program (CAP).

URBAN ECOLOGY

In highly urbanised environments, such as metropolitan Melbourne, it is important to recognise the need to maintain and enhance the health of our urban ecosystems to improve living conditions not only for wildlife but also for people. We can improve our urban ecosystem by incorporating vegetation through landscaping in both new and existing developments.

Insulant ODP

All thermal insulation used in the development will not contain any ozone-depleting substances and will not use any in its manufacturing.

IMPLEMENTATION & MONITORING

The proposed Brown Street development will meet the best practice requirement of the City of Greater Geelong through the different initiatives described in this SMP, such as a thermally efficient building envelope, efficient air conditioning and hot water system and sustainable materials. An appropriate implementation and monitoring of the initiatives outlined within this SMP will be required.

Implementation of the ESD initiatives outlined in this report requires the following processes:

- Full integration with architectural plans and specifications
- Full integration with building services, design drawings, and specifications
- Endorsement of the ESD Report with town planning drawings
- ESD initiatives to be included in plans and specifications for building approval

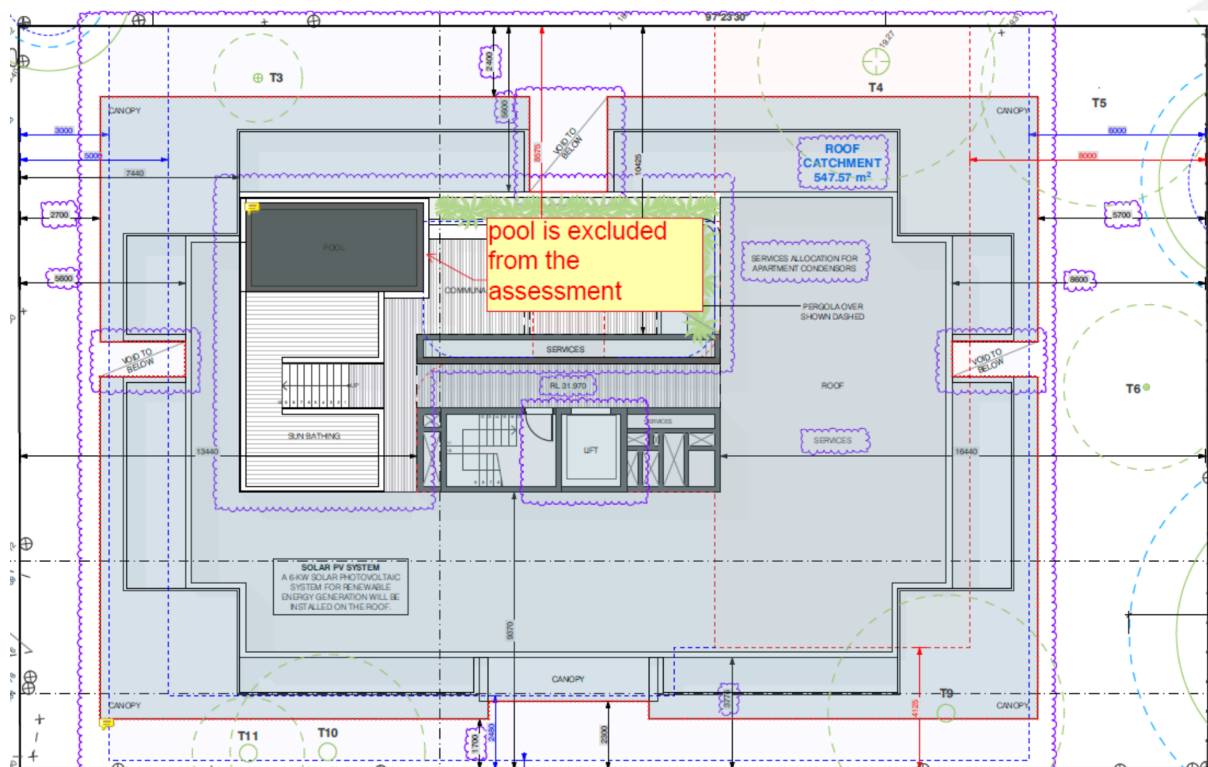
APPENDIX A – WSUD REPORT / BLUE FACTOR ASSESSMENT

New development must comply with the best practice performance targets for suspended solids, total phosphorus, and total nitrogen, as set out in the Urban Stormwater Best Practice Environmental Management Guidelines, Victoria Stormwater Committee 1999. Currently, these water quality performance targets require:

- Suspended Solids - 80% retention of typical urban annual load.
- Total Nitrogen - 45% retention of typical urban annual load.
- Total Phosphorus - 45% retention of typical urban annual load.
- Litter - 70% reduction of typical urban annual load.

The Blue Factor, an industry-accepted tool, was used to assess development and ensure that the best-practice targets described above were met. A minimum compliance score of 100% is required for the development.

In the stormwater assessment, the pool area is excluded from the total site area. The pool will be connected directly to the sewer and will not affect stormwater management. The pool covers 18 m^2 , so the site area used for the stormwater assessment is calculated as follows: $1011.8 \text{ m}^2 - 18 \text{ m}^2 = 993.8 \text{ m}^2$.



Site Delineation

For the assessment, the development has been delineated into the following surface types:

- Assessed area of 993.8m².
- Parts of the roof area runoff of 554.4 m² which will be diverted into rainwater tank(s);
- Landscape areas on the ground floor of 76.2m²;
- Remainder of impervious areas of 363.2m² comprised of unconnected roof/terrace areas and other impervious areas around the site.

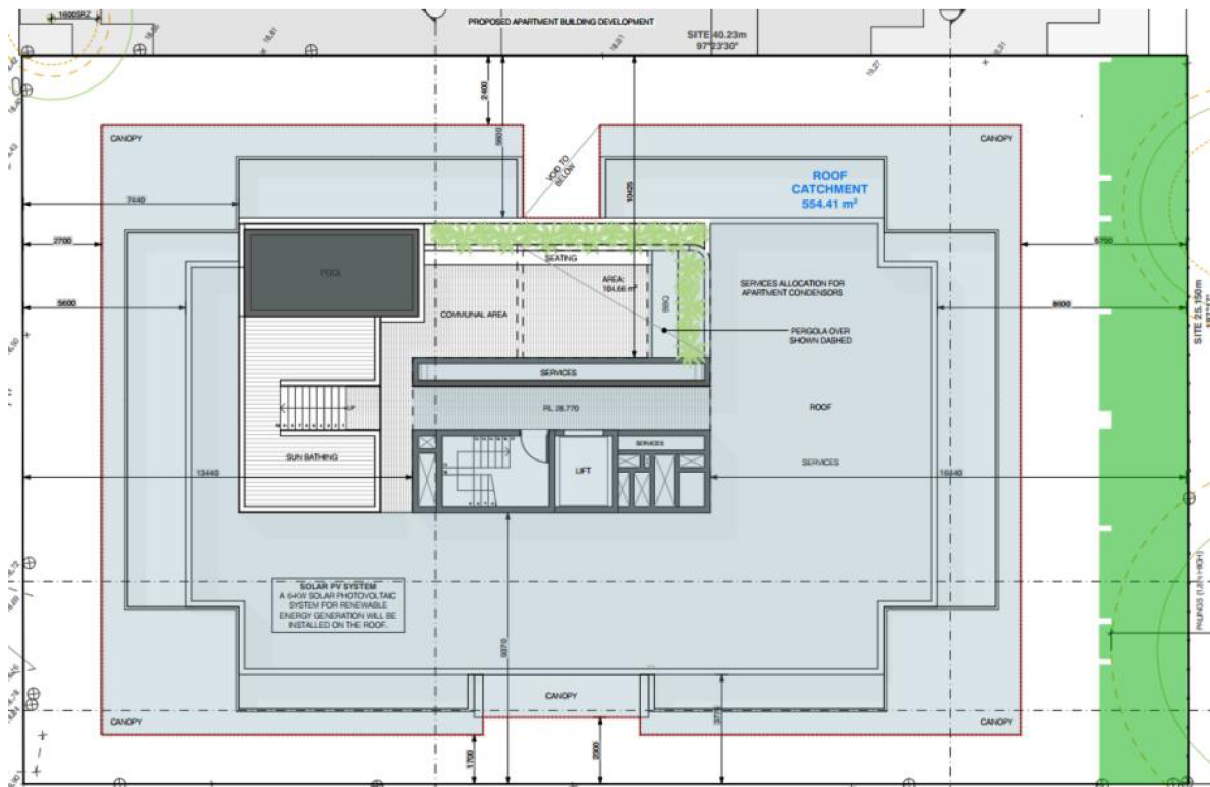


Figure 5: Roof catchment to RWT (blue), permeable landscape (green) and excluded from the assessment (Dark)

Stormwater initiatives

Rainwater Tank

(20,000L Rainwater tank for toilet flushing)

The roof catchment area (as described above) and rainwater tank(s) with a total effective capacity of 20,000 L for the development. **The rainwater collected will be used for toilet flushing in all apartments.**

The remainder of the impervious areas will be directly released at the legal point of discharge on site.

Stormwater Results

The initiatives and areas described above have been applied to the Blue Factor calculator, and the proposed development has achieved a score over 100%.

Key Data

- 26 bedrooms have been input
- 18 Toilets have been input

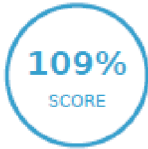
The blue factor results are on the following pages.

[REDACTED] FCS 67935 - 9 Brown Street, Portarlington
9 Brown St, Portarlington VIC 3223, Australia
19 December 2025 9:45 a.m.



FCS 67935 - 9 Brown Street, Portarlington

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.



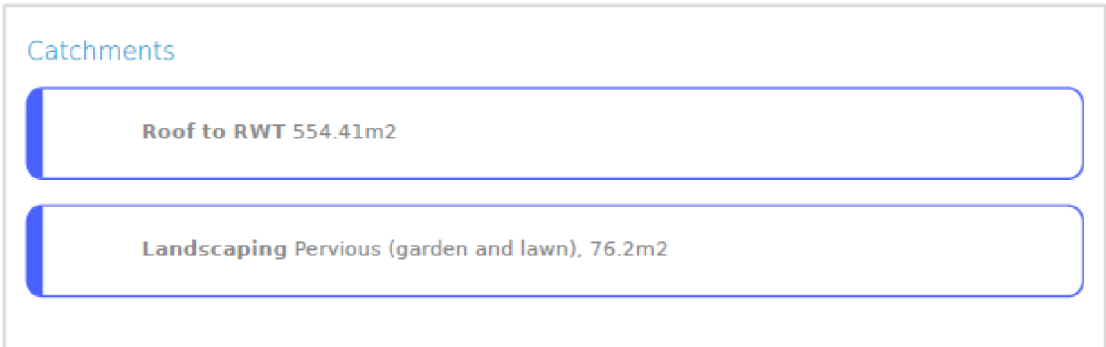
Project details

Name	[REDACTED] 9 Brown Street, Portarlington
Street address	9 Brown St, Portarlington VIC 3223, Australia
Municipality	Greater Geelong
Site area	993.8 m ²
Planning Number	PP-305-2023

Flow and pollutant load reductions

Item	Result	Target
Mean annual runoff volume harvested or evapotranspired (%)	47%	>28%
Mean annual runoff volume infiltrated or filtered (%)	0%	>9%
Total suspended solids (%)	55%	>80%
Total phosphorus (%)	52%	>45%
Total nitrogen (%)	49%	>45%
Total gross pollutants (%)	60%	>70%

Water treatment



Other impervious around the site - Trifficable Roof Paved,
363.2m2

Treatments

Roof Catchment Area Rainwater Tank,
Rainwater tank retention volume in kilolitres: 20

Buildings & dwellings

Building Non-Residential Mixed Use, 26 employee(s)

Configuration 1

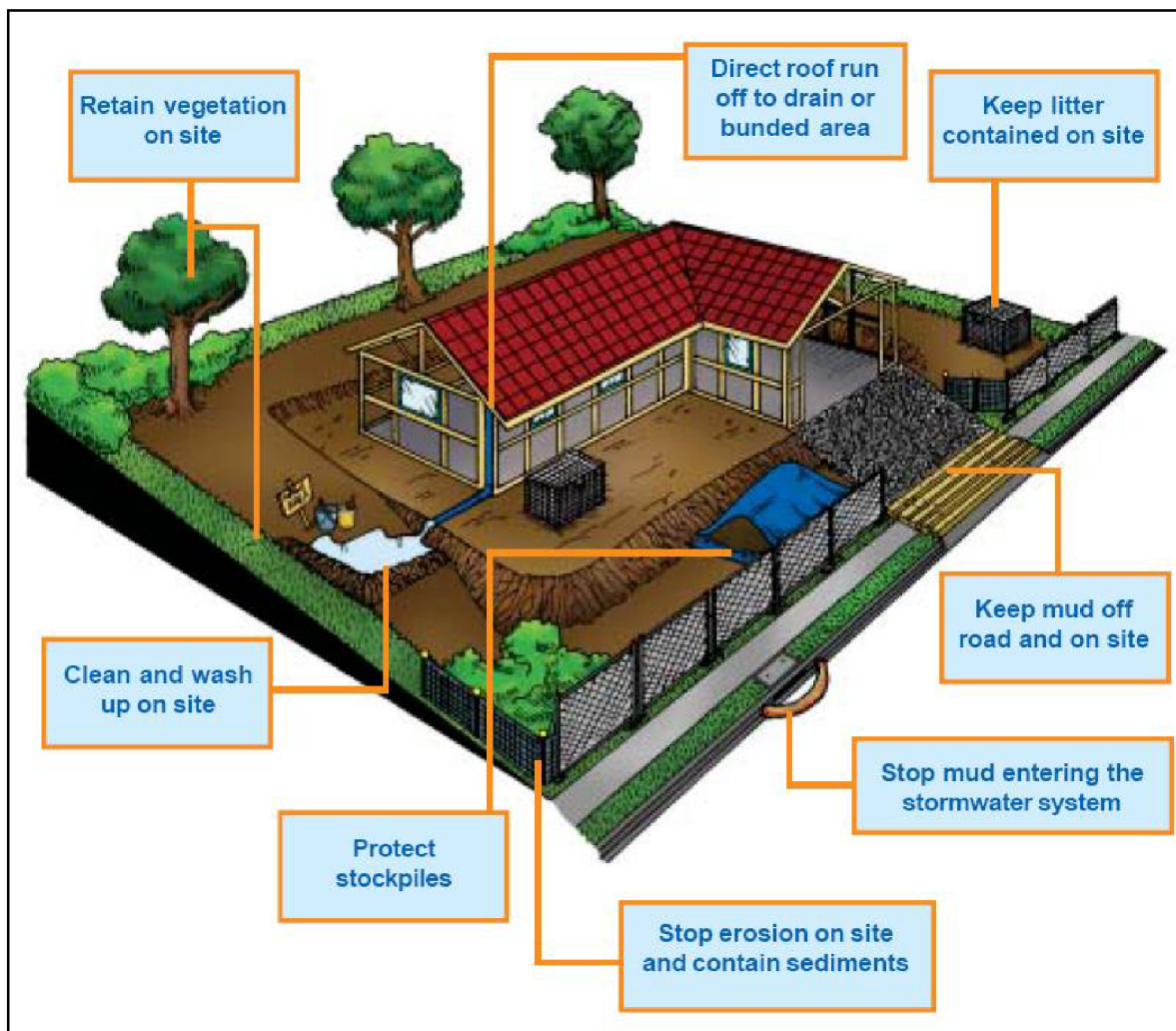
Roof to RWT 554.41m2

Roof Catchment Area Rainwater Tank,
Rainwater tank retention volume in kilolitres: 20.

Building Non-Residential Mixed Use, 26 employee(s)

Stormwater Management at Construction Site

To manage stormwater management in the construction stage, measures will be put in place to minimise the likelihood of contaminating stormwater. This will mean ensuring buffer strips are in place, sediment traps are installed, and the site will be kept clean from any loose rubbish. The builder will follow the process outlined in “Keeping Our Stormwater Clean – A Builder’s Guide” by Melbourne Water.



Copies of “Keeping Our Stormwater Clean – A Builder’s Guide” booklet can be downloaded from the following website.

<https://www.clearwatervic.com.au/resource-library/guidelines-and-strategy/keeping-our-stormwater-clean-a-builders-guide.php>

APPENDIX B – WSUD MAINTENANCE

Installation

Rainwater Tank(s)

The rainwater tank(s) will be installed on the ground floor. Its manufacturer or material has not been nominated. It will be installed with a mesh insect screen over the inlet pipe to prevent the tank from becoming a breeding ground for pests. Mesh needs to be installed over overflow pipes, and if a manhole is present, it needs to be properly sealed.

Please refer to the architectural drawings for the location of the rainwater tank.

Pumps

The pumps required either to divert the stormwater runoff to the rainwater tank or to distribute the collected water to the end uses (toilets) will be required to be installed as per the chosen manufacturer specifications.

Inspection Requirements

Rainwater Tanks

Inspections of roof areas and gutters leading to the tank should take place every 6 months. Rainwater in the tanks should be checked every 6 months for mosquito infestation.

The rainwater tank should be examined every 2 years for sludge build up.

Ensure the monitoring system (be it digital or a simple float system) is functioning properly by checking the water level in the rainwater tanks.

Pumps

The pumps required will be required to be routinely inspected by listening for the day-to-day operation of the pumps. Unusual noise or no noise should be investigated. Inspection should occur as per the chosen manufacturer specifications.

Clean Out / Maintenance Procedure

Rainwater Tank, Roof and Gutters

Rainwater tanks will require the roof and gutters onsite to be maintained; gutters should be checked, maintained and cleaned every six months to avoid blockages from occurring. If a leaf blocking system is installed this can be completed annually.

Any trees onsite should be maintained every 6 months with branches overhanging the roof removed.

Water ponding in gutters should be avoided as this provides a breeding ground for mosquitos; tanks should also not become breeding grounds for mosquitoes. If mosquitoes are detected in the tank remedial steps need to occur to prevent breeding. If mosquitoes or other insects are found in rainwater tanks, the point of entry should be

located and repaired. As well as preventing further access, this will prevent the escape of emerging adults. Gutters should be inspected to ensure they do not contain ponded water, and be cleaned if necessary.

Please refer to <https://www.health.vic.gov.au/sites/default/files/2022-11/Keeping-your-rainwater-tank-safe-from-mosquitos.pdf> for more information on mosquito control.

Rainwater tanks should be checked by regular maintenance person every 3-6 months to ensure that connection to the building is maintained and there are no blockages.

A simple way to ensure the tank is operating as intended would be through the installation of a smart monitoring device (e.g. OneBox®). These systems allow users to operate tanks remotely from internet or smartphone, monitor and control the tanks in real time, allow automatic release of stored water prior to storm events, alert users if there is any blockage and view tank history and usage patterns.

Alternatively, onsite tank gauges can help those familiar with the tank know if the tank is not working correctly.

Pumps

Maintenance should occur as per the chosen manufacturer specifications. All strainers and filters should be cleaned every 6 months. Good quality pump should provide trouble free service for up to 10 years.

Commissioning

Rainwater Tank

All rainwater tanks should be washed or flushed out prior to use. All inlets and outlets should be correctly sealed to prevent insects from entering. Connection to all toilets in the development should be tested (dye test or equivalent).

Please note if new roof coating or paint is to be installed then the first few run-offs after installation need to be discarded.

Pumps

Commissioning should occur as per the chosen manufacturer specifications.

Summary

The following needs to occur onsite to ensure compliance with WSUD requirements and maintain operation of rainwater tank and connections onsite.

Task	When?	Requirement
Inspect Rainwater tanks	Every 6 months	• Check for any damage/compression • Mosquitoes infestation
	Every 2 years	• Sludge Build up – if sludge build up occurs a vacuum tank needs to be called out to site.
Inspect roofs & gutters	Every 6 months	• Clean out of leaves / debris. • Remove any overhanging branches onsite.

APPENDIX C – DAYLIGHT ACCESS – GREEN STAR CALCULATION

The Green Building Council of Australia (GBCA) has created a daylight access calculation method within the Green Star benchmarking tool. This tool is widely recognised by Councils and Industry.

The Green Star Daylight Hand Calculation method is used to determine if there are risks associated with the current design, particularly with respect to meeting the desired daylight factors referenced in the Sustainable Management Plan in the Planning Process (SDAPP) Indoor Environment Quality guidelines.

According to the SDAPP guidelines, best practice is achieved where 2% daylight factor is achieved across 30% of the floor area of the nominated area.

The calculation method is based on one simple formula to calculate a zone of compliance within a nominated room. The compliant zone is the area of the room achieving 2% daylight factor and can be calculated as follows:

$$\text{Zone of Compliance} = 2 \times h \times w$$

w is the width of the glazing serving the room

h is the height of the window head above the desktop/table level

Windows serving the nominated area are required to have a minimum 40% VLT to use the formula.

The percentage of compliant area within the nominated area can then be easily calculated with the following formula:

$$\text{Percentage of compliant area} = \frac{\text{Zone of Compliance}}{\text{Nominated Area}} \times 100$$

Site Description

The nominated areas for the Hand Calculation for commercial areas (Blue). Stairs and stairs landing are considered as secondary space and are excluded from the assessment. The desktop/table level has been estimated to be 700mm. See below for the mark-up of the compliant zone (light blue) within each nominated area (brown).



Figure 6: Compliance zone at Ground floor

	Nominated Areas (m²)	Compliant Areas (m²)	Compliant Areas (%)
Retail 1	95.68	45.47	
Retail 2	90.62	34.79	
Retail 3	141.53	68.33	
TOTAL	327.83	148.59	45%

The green star hand calculation for the proposed commercial space shows that the development will meet and exceed the SDAPP best-practice requirement, with the space achieving 45% of floor area at a 2% daylight factor.

APPENDIX D – VOC & FORMALDEHYDE EMISSION LIMITS

The following table are an extract of the Green Star Design and as built submission guidelines:

Table 13.1.1: Maximum TVOC Limits for Paints, Adhesives and Sealants

Product Category	Max TVOC content in grams per litre (g/L) of ready to use product.
General purpose adhesives and sealants	50
Interior wall and ceiling paint, 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 sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

The product complies with the Total VOC (TVOC) limits specified in the Table below.

Carpet Test Standards and TVOC Emissions Limits

Test protocol	Limit
ASTM D5116 - Total VOC limit	0.5mg/m ² per hour
ASTM D5116 - 4-PC (4-Phenylcyclohexene)	0.05mg/m ² per hour
ISO 16000 / EN 13419 - TVOC at three days	0.5 mg/m ² per hour
ISO 10580 / ISO/TC 219 (Document N238) - TVOC at 24 hours	0.5mg/m ² per hour

Table 13.2: Formaldehyde Emission Limit Values for Engineered Wood Products

Test Protocol	Emission Limit/ Unit of Measurement
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1mg/ 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	≤1mg/ L
AS/NZS 4357.4 - Laminated Veneer Lumber (LVL)	≤1mg/ L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1mg/ L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1 mg/m ² hr*
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m ² hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m ² hr (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)	≤0.12mg/m ³
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m ² hr

*mg/m²hr may also be represented as mg/m²/hr.

APPENDIX E– BESS ASSESSMENT & DAYLIGHT INPUT

The BESS daylight built-in calculator has been used to assess the residential component of this development, as it is deemed sufficient to demonstrate daylight access levels. The BESS assessment clearly shows that the overall IEQ levels for the development meet best practice, including daylight access.

All of the bedrooms and living rooms in the proposed development comply with BESS Deemed-To-Satisfy daylight criteria as follows:

- Ceiling heights are 2.7m.
- All rooms are less than 8m deep – South-facing bedrooms are less than 5m.
- Glazing to be 60% VLT in habitable rooms (apartment only).
- External windows are provided for each bedroom.
- Building separation in line with the BESS tool notes requirements.

BESS Report

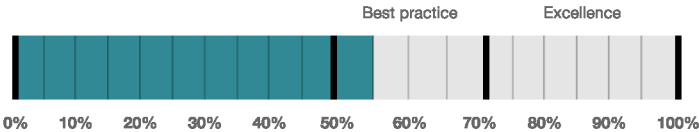
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 9 Brown St Portarlington Victoria 3223. 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 Greater Geelong 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



58%

Project details

Name 9 Brown St, Portarlington VIC 3223, Australia
Address 9 Brown St Portarlington Victoria 3223
Project ID [REDACTED]
BESS Version BESS-7
Date 15 April 2026
Software version 2.3.0-B.649



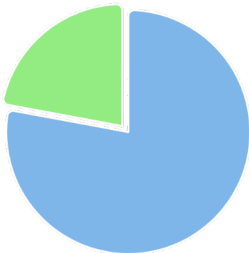
Site type Mixed use development
Account [REDACTED]
Application no. [REDACTED]
Site area 1,011 m²
Building floor area 1,484 m²

Performance by category

● This project ● Maximum available

Category	Weight	Score	Pass
Management	5%	15%	●
Water	9%	57%	✓
Energy	28%	55%	✓
Stormwater	14%	100%	✓
IEQ	17%	73%	✓
Transport	9%	84%	●
Waste	6%	66%	●
Urban Ecology	6%	11%	●
Innovation	9%	0%	●

Project composition



● Apartment ● Shop

Buildings

Name	Height	Footprint	% of total footprint
Mixed Use	3	950 m ²	100%

Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	Building	% of total area
Apartment				
Type 5	2	128 m ²	Mixed Use	17%
Type 1	2	104 m ²	Mixed Use	14%
Type 2	2	102 m ²	Mixed Use	13%
Type 7	1	126 m ²	Mixed Use	8%
Type 6	1	129 m ²	Mixed Use	8%
Type 4	1	116 m ²	Mixed Use	7%
Type 3	1	118 m ²	Mixed Use	7%
Total	10	1,157 m²	77%	

Non-Res Spaces

Name	Quantity	Area	Building	% of total area
Shop				
Retail 1	1	142 m ²	Mixed Use	9%
Retail 3	1	95.7 m ²	Mixed Use	6%
Retail 2	1	90.6 m ²	Mixed Use	6%
Total	3	327 m²	22%	

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		-
Water 3.1	Annotation: Water efficient garden details		-
Energy 3.1	Carpark with natural ventilation or CO monitoring system		-
Energy 4.2	Location and size of solar photovoltaic system		-
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
IEQ 1.1	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
IEQ 1.2	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
IEQ 1.3	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-

Credit	Requirement	Response	Status
IEQ 1.5	Floor plans with compliant bedrooms marked		-
IEQ 2.1	Dwellings meeting the requirements for being 'naturally ventilated'		-
Transport 1.1	Location of residential bicycle parking spaces		-
Transport 1.2	Location of residential visitor bicycle parking spaces		-
Transport 1.3	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		-
Waste 2.1	Location of food and garden waste facilities		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 2.1	Location and size of vegetated areas		-

Supporting Documentation

Credit	Requirement	Response	Status
Management 2.3a	Section J glazing assessment		-
Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
Energy 3.1	Details of either the fully natural carpark ventilation or CO monitoring system proposed		-
Energy 3.6	Average lighting power density and lighting type(s) to be used		-
Energy 3.7	Average lighting power density and lighting type(s) to be used		-
Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 1.1	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
IEQ 1.2	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
IEQ 1.3	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
IEQ 1.4	A short report detailing assumptions used and results achieved.		-
IEQ 1.5	A list of compliant bedrooms		-
IEQ 2.1	A list of naturally ventilated dwellings		-

Credit summary

Management Overall contribution 4.5%

		15%
1.1 Pre-Application Meeting		0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		0%
2.3 Thermal Performance Modelling - Non-Residential		50%
3.1 Metering - Residential		100%
3.2 Metering - Non-Residential		100%
3.3 Metering - Common Areas		0%
4.1 Building Users Guide		0%

Water Overall contribution 9.0%

	Minimum required 50%	57%	✓ Pass
1.1 Potable Water Use Reduction	40%		
3.1 Water Efficient Landscaping	100%		
4.1 Building Systems Water Use Reduction	100%		

Energy Overall contribution 27.5%

	Minimum required 50%	55%	✓ Pass
1.1 Thermal Performance Rating - Non-Residential	12%		
1.2 Thermal Performance Rating - Residential	16%		
2.1 Greenhouse Gas Emissions	100%		
2.2 Peak Demand	0%		
2.3 Electricity Consumption	100%		
2.4 Gas Consumption	100%		
2.6 Electrification	0%	⊘ Disabled	
Credit is available when project is declared to have no gas connection.			
3.1 Carpark Ventilation	100%		
3.2 Hot Water	100%		
3.4 Clothes Drying	0%		
3.6 Internal Lighting - Apartments	100%		
3.7 Internal Lighting - Non-Residential	100%		
4.1 Combined Heat and Power (cogeneration / trigeneration)	N/A	⚡ Scoped Out	
No cogeneration or trigeneration system in use.			
4.2 Renewable Energy Systems - Solar	100%		
4.4 Renewable Energy Systems - Other	0%	⊘ Disabled	
No other (non-solar PV) renewable energy is in use.			

Stormwater Overall contribution 13.5%

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

IEQ Overall contribution 16.5%

		Minimum required 50%	73%	✓ Pass
	1.1 Daylight Access - Living Areas		100%	
	1.2 Daylight Access - Bedrooms		100%	
	1.3 Winter Sunlight		100%	
	1.4 Daylight Access - Non-Residential		45%	✓ Achieved
	1.5 Daylight Access - Minimal Internal Bedrooms		100%	
	2.1 Effective Natural Ventilation		66%	
	2.3 Ventilation - Non-Residential		33%	✓ Achieved
	3.4 Thermal comfort - Shading - Non-Residential		0%	
	3.5 Thermal Comfort - Ceiling Fans - Non-Residential		0%	
	4.1 Air Quality - Non-Residential		100%	

Transport Overall contribution 9.0%

		84%
	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	N/A ✦ Scoped Out
		Not viable
	2.3 Motorbikes / Mopeds	0%

Waste Overall contribution 5.5%

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

Urban Ecology Overall contribution 5.5%

		11%
1.1 Communal Spaces		0%
2.1 Vegetation		25%
2.2 Green Roofs		0%
2.3 Green Walls and Facades		0%
2.4 Private Open Space - Balcony / Courtyard Ecology		0%
3.1 Food Production - Residential		0%
3.2 Food Production - Non-Residential		0%

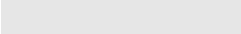
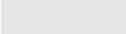
Innovation Overall contribution 9.0%

		0%
1.1 Innovation		0%

Credit breakdown

Management Overall contribution 4.5%

	15%
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1.1 Pre-Application Meeting		0%
Score Contribution	This credit contributes 37.5% towards the category score.	
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?	
Question	Criteria Achieved ?	
Project	No	
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		0%
Score Contribution	This credit contributes 19.5% towards the category score.	
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?	
Question	Criteria Achieved ?	
Apartment	No	
2.3 Thermal Performance Modelling - Non-Residential		50%
Score Contribution	This credit contributes 5.5% towards the category score.	
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2019 Section J1.5?	
Question	Criteria Achieved ?	
Shop	Yes	
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2019 Section J (Energy Efficiency), NABERS or Green Star?	
Question	Criteria Achieved ?	
Shop	No	
3.1 Metering - Residential		100%
Score Contribution	This credit contributes 9.7% 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 2.8% 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		0%

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	No
Shop	No
4.1 Building Users Guide	0%
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	No

Water Overall contribution 9.0%

Minimum required 50%

57%

✓ Pass

Water Approach

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

Do you have a reticulated third pipe or an on-site water recycling system?:

No

Are you installing a swimming pool?:

Yes

Are you installing a rainwater tank?:

Yes

Fixtures, fittings & connections profile

Showerhead: All 4 Star WELS (≥ 6.0 but ≤ 7.5)

Bath: All Scope out

Kitchen Taps: All ≥ 5 Star WELS ratingBathroom Taps: All ≥ 5 Star WELS rating

Dishwashers: All Default or unrated

WC: All ≥ 4 Star WELS rating

Urinals: All Scope out

Washing Machine Water Efficiency:

Retail 1 Scope out

Retail 2

Retail 3

Type 1 Default or unrated

Type 2

Type 3

Type 4

Type 6

Type 7

Type 5

Which non-potable water source is the dwelling/space connected to?:

Retail 1 -

Retail 2

Retail 3

Type 1 RWT

Type 2

Type 3

Type 4

Type 6

Type 7

Type 5

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

Rainwater tank profile

What is the total roof area connected to the rainwater tank?:	
RWT	554 m ²
	-
Tank Size:	
RWT	20,000 Litres
	-
Irrigation area connected to tank:	
RWT	0.0 m ²
	-
Is connected irrigation area a water efficient garden?:	
RWT	No
	-
Other external water demand connected to tank?:	
RWT	0.0 Litres/Day
	-
1.1 Potable Water Use Reduction	
40%	
Score Contribution	This credit contributes 71.4% 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	2175 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	1735 kL
Output	Proposed (including rainwater and recycled water use)
Project	1578 kL
Output	% Reduction in Potable Water Consumption
Project	27 %
Output	% of connected demand met by rainwater
Project	100 %
Output	How often does the tank overflow?
Project	Very Often
Output	Opportunity for additional rainwater connection
Project	790 kL
3.1 Water Efficient Landscaping	
100%	
Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes
4.1 Building Systems Water Use Reduction	
100%	

Score Contribution	This credit contributes 14.3% 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

Energy Overall contribution 27.5%

Minimum required 50%

55% ✓ Pass

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

Dwellings Energy Approach

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

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

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

Energy Supply: Electricity & Natural Gas

Are you installing a cogeneration or trigeneration system?: No

Dwelling Energy Profiles

Building: All Mixed Use

Below the floor is:

Type 1 Ground or Carpark

Type 2

Type 3

Type 4

Type 6 Another Occupancy

Type 7

Type 5

Above the ceiling is:

Type 1 Another Occupancy

Type 2

Type 3

Type 4

Type 6 Outside

Type 7

Type 5

Exposed sides: All 4

NatHERS Annual Energy Loads - Heat: All 90.0 MJ/sqm

NatHERS Annual Energy Loads - Cool: All 19.0 MJ/sqm

NatHERS star rating: All 6.5

Type of Heating System: All Reverse cycle space

Heating System Efficiency: All 3 Star

Type of Cooling System: All Refrigerative space

Cooling System Efficiency: All 3 Stars

Type of Hot Water System: All Gas Instantaneous 6 star

% Contribution from solar hot water system: All 0 %

Is the hot water system shared by multiple dwellings?: All No

Clothes Line: All No drying facilities

Clothes Dryer: All Occupant to Install

Non-residential buildings profile

Heating, Cooling & Comfort Ventilation - Electricity 42,709 kWh

Reference fabric & services:

Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services:	42,709 kWh
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & services:	42,709 kWh
Heating - Gas - Reference fabric and services:	14,206 MJ
Heating - Gas - Proposed fabric and Reference services:	14,206 MJ
Heating - Gas - Proposed fabric and services:	14,206 MJ
Heating - Wood - reference fabric and services:	0.0 MJ
Heating - Wood - proposed fabric and reference services:	0.0 MJ
Heating - Wood - proposed fabric and services:	0.0 MJ
Hot Water - Electricity - Reference:	1,421 kWh
Hot Water - Electricity - Proposed:	1,421 kWh
Hot Water - Gas - Baseline:	1,000 MJ
Hot Water - Gas - Proposed:	899 MJ
Lighting - Reference:	4,271 kWh
Lighting - Proposed:	4,271 kWh
Peak Thermal Cooling Load - Reference:	0.0 kW
Peak Thermal Cooling Load - Proposed:	0.0 kW
Solar Photovoltaic system profile	
System Size (lesser of inverter and panel capacity):	
Solar PV	3.0 kW peak
Solar PV	3.0 kW peak
Orientation (which way is the system facing)?:	
Solar PV	North
Solar PV	North
Inclination (angle from horizontal):	
Solar PV	10.0 Angle (degrees)
Solar PV	10.0 Angle (degrees)
Which Building Class does this apply to?:	
Solar PV	Apartment
Solar PV	Shop
1.1 Thermal Performance Rating - Non-Residential	12%

Score Contribution	This credit contributes 7.6% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2019 Section J)?
Annotation	The development will commit to an improvement on the NCC 2019 Section J using a JV3 modelling assessment. The JV3 will occur at the building approval stage when services and full working drawings are available. Figures input in the table are based on the Baseline Energy Consumption and GHG Emissions in Mixed Use Buildings in Australia by the Council of Australian Governments (COAG). Retail building has an energy consumption of 469 MJ/m2.annum or 130.27kWh/m2.annum. Retail are 327.8qm therefore total energy consumption is assumed at 42,709 kWh with 10% for lighting.
Output	Total Improvement
Shop	0 %
1.2 Thermal Performance Rating - Residential	
Score Contribution	This credit contributes 20.1% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Apartment	6.5 Stars
2.1 Greenhouse Gas Emissions	
Score Contribution	This credit contributes 8.6% 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	60,801 kg CO2
Shop	10,110 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	26,583 kg CO2
Shop	10,109 kg CO2
Output	% Reduction in GHG Emissions
Apartment	56 %
Shop	< 1 %
2.2 Peak Demand	
Score Contribution	This credit contributes 4.3% towards the category score.
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?
Output	Peak Thermal Cooling Load - Baseline
Apartment	123 kW
Output	Peak Thermal Cooling Load - Proposed
Apartment	123 kW
Output	Peak Thermal Cooling Load - % Reduction
Apartment	< 1 %
2.3 Electricity Consumption	

Score Contribution	This credit contributes 8.6% towards the category score.
Criteria	What is the % reduction in annual electricity consumption against the benchmark?
Output	Reference
Apartment	51,736 kWh
Shop	9,743 kWh
Output	Proposed
Apartment	20,815 kWh
Shop	9,743 kWh
Output	Improvement
Apartment	59 %
Shop	0 %
2.4 Gas Consumption	 100%
Score Contribution	This credit contributes 8.6% towards the category score.
Criteria	What is the % reduction in annual gas consumption against the benchmark?
Output	Reference
Apartment	156,221 MJ
Shop	3,357 MJ
Output	Proposed
Apartment	104,122 MJ
Shop	3,335 MJ
Output	Improvement
Apartment	33 %
Shop	< 1 %
2.6 Electrification	 0%  Disabled
Credit is available when project is declared to have no gas connection.	
This credit is disabled	Credit is available when project is declared to have no gas connection.
3.1 Carpark Ventilation	 100%
Score Contribution	This credit contributes 8.6% 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?
Annotation	Enclosed carpark on Ground floor
Question	Criteria Achieved ?
Project	Yes
3.2 Hot Water	 100%

Score Contribution	This credit contributes 4.3% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?
Output	Reference
Apartment	156,221 MJ
Shop	1,350 MJ
Output	Proposed
Apartment	105,691 MJ
Shop	1,328 MJ
Output	Improvement
Apartment	32 %
Shop	1 %
3.4 Clothes Drying	0%
Score Contribution	This credit contributes 3.4% towards the category score.
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?
Output	Reference
Apartment	5,963 kWh
Output	Proposed
Apartment	5,963 kWh
Output	Improvement
Apartment	0 %
3.6 Internal Lighting - Apartments	100%
Score Contribution	This credit contributes 6.7% 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 Table J6.2a of the NCC 2019 Vol 1 (Class 2-9)?
Question	Criteria Achieved ?
Apartment	Yes
3.7 Internal Lighting - Non-Residential	100%
Score Contribution	This credit contributes 1.9% 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 J6.2a of the NCC 2019 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	100%

Score Contribution	This credit contributes 4.3% 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	3,636 kWh	
Shop	3,636 kWh	
Output	% of Building's Energy	
Apartment	7 %	
Shop	31 %	
4.4 Renewable Energy Systems - Other		0%  Disabled
No other (non-solar PV) renewable energy is in use.		
This credit is disabled		No other (non-solar PV) renewable energy is in use.

Stormwater Overall contribution 13.5%

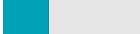
	Minimum required 100%	100%	 Pass
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Which stormwater modelling are you using?:	Melbourne Water STORM tool	
1.1 Stormwater Treatment		100%
Score Contribution	This credit contributes 100% towards the category score.	
Criteria	Has best practice stormwater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

IEQ Overall contribution 16.5%

		Minimum required 50%	73%	✓ Pass
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Use the BESS Deemed to Satisfy (DtS) method for daylight to Dwellings?:	Yes
Are all living areas and bedrooms less than 8m deep (5m if south facing)?:	Yes
Do all living areas and bedrooms have a floor-to-ceiling height of at least 2.7m?:	Yes
Does all glazing to living areas achieve at least 60% Visible Light Transmittance (VLT)?:	Yes
Do all living areas have an external facing window (not into a courtyard, light well or other major obstruction)? :	Yes
Does the building(s) comply with the requirements of the building separation tables?:	Yes
What approach do you want to use for daylight to Dwellings?:	Use the built in calculation tools
1.1 Daylight Access - Living Areas	100%
Score Contribution	This credit contributes 18% towards the category score.
Criteria	What % of living areas achieve a daylight factor greater than 1%
Output	Calculated percentage
Apartment	100 %
1.2 Daylight Access - Bedrooms	100%
Score Contribution	This credit contributes 18% towards the category score.
Criteria	What % of bedrooms achieve a daylight factor greater than 0.5%
Output	Calculated percentage
Apartment	100 %
1.3 Winter Sunlight	100%
Score Contribution	This credit contributes 6.3% towards the category score.
Criteria	Do 70% of dwellings receive at least 3 hours of direct sunlight in all Living areas between 9am and 3pm in mid-winter?
Question	Criteria Achieved ?
Apartment	Yes
1.4 Daylight Access - Non-Residential	45% ✓ Achieved
Score Contribution	This credit contributes 10.7% towards the category score.
Criteria	What % of the nominated floor area has at least 2% daylight factor?
Question	Percentage Achieved?
Shop	45 %
1.5 Daylight Access - Minimal Internal Bedrooms	100%

Score Contribution	This credit contributes 6.3% towards the category score.
Criteria	Do at least 90% of dwellings have an external window in all bedrooms?
Question	Criteria Achieved ?
Apartment	Yes
2.1 Effective Natural Ventilation	 66%
Score Contribution	This credit contributes 18% towards the category score.
Criteria	What % of dwellings are effectively naturally ventilated?
Question	Percentage Achieved?
Apartment	75 %
2.3 Ventilation - Non-Residential	 33%  Achieved
Score Contribution	This credit contributes 10.7% towards the category score.
Criteria	What % of the regular use areas are effectively naturally ventilated?
Question	Percentage Achieved?
Shop	0 %
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	50 %
Criteria	What CO2 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 5.4% 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 1.8% 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 1.8% 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%

		84%
1.1 Bicycle Parking - Residential		100%
Score Contribution	This credit contributes 20% towards the category score.	
Criteria	How many secure and undercover bicycle spaces are there per dwelling for residents?	
Question	Bicycle Spaces Provided ?	
Apartment	10	
Output	Min Bicycle Spaces Required	
Apartment	10	
1.2 Bicycle Parking - Residential Visitor		100%
Score Contribution	This credit contributes 20% towards the category score.	
Criteria	How many secure bicycle spaces are there per 5 dwellings for visitors?	
Annotation	2 Bike Space at ground level	
Question	Visitor Bicycle Spaces Provided ?	
Apartment	2	
Output	Min Visitor Bicycle Spaces Required	
Apartment	2	
1.3 Bicycle Parking - Convenience Residential		100%
Score Contribution	This credit contributes 10% 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 5.7% 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	3	
1.5 Bicycle Parking - Non-Residential Visitor		100%
Score Contribution	This credit contributes 2.8% 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)?	
Annotation	2 Bike Space at ground level	
Question	Criteria Achieved ?	
Shop	Yes	
Question	Bicycle Spaces Provided ?	
Shop	2	

1.6 End of Trip Facilities - Non-Residential		0%
Score Contribution	This credit contributes 2.8% 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	-	
Question	Number of lockers provided ?	
Shop	-	
Output	Min Showers Required	
Shop	1	
Output	Min Lockers Required	
Shop	3	
2.1 Electric Vehicle Infrastructure		100%
Score Contribution	This credit contributes 25.7% towards the category score.	
Criteria	Are facilities provided for the charging of electric vehicles?	
Question	Criteria Achieved ?	
Project	Yes	
2.2 Car Share Scheme		N/A  Scoped Out
		Not viable
This credit was scoped out	Not viable	
2.3 Motorbikes / Mopeds		0%
Score Contribution	This credit contributes 12.9% towards the category score.	
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?	
Question	Criteria Achieved ?	
Project	No	

Waste Overall contribution 5.5%

		66%
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1.1 - Construction Waste - Building Re-Use		0%
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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%
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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%
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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%

		11%
1.1 Communal Spaces		0%
Score Contribution	This credit contributes 11.4% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m ² for each of the first 50 occupants * Additional 0.5m ² for each occupant between 51 and 250 * Additional 0.25m ² for each occupant above 251?	
Question	Common space provided	
Apartment	-	
Shop	-	
Output	Minimum Common Space Required	
Apartment	26 m ²	
Shop	32 m ²	
2.1 Vegetation		25%
Score Contribution	This credit contributes 45.6% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Annotation	minimum 5% of total site covered by veg	
Question	Percentage Achieved ?	
Project	5 %	
2.2 Green Roofs		0%
Score Contribution	This credit contributes 11.4% 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 11.4% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	No	
2.4 Private Open Space - Balcony / Courtyard Ecology		0%
Score Contribution	This credit contributes 8.9% 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	No	
3.1 Food Production - Residential		0%

Score Contribution	This credit contributes 8.9% towards the category score.
Criteria	What area of space per resident is dedicated to food production?
Question	Food Production Area
Apartment	-
Output	Min Food Production Area
Apartment	7 m²

3.2 Food Production - Non-Residential	0%
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Score Contribution	This credit contributes 2.5% towards the category score.
Criteria	What area of space per occupant is dedicated to food production?
Question	Food Production Area
Shop	-
Output	Min Food Production Area
Shop	9 m²

Innovation Overall contribution 9.0%

	0%
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1.1 Innovation	0%
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Score Contribution	This credit contributes 100% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?

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