

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

# Sustainability Management Plan

**309 Bellerine Street,  
South Geelong**

**19<sup>th</sup> March 2026**

**[Admin@msconsultants.com.au](mailto:Admin@msconsultants.com.au)**

**Melbourne  
Sustainability  
Consultants.**

## Table of Contents

Introduction & Council's Requirements .....	3
Site & Proposed Development Description.....	3
ESD Assessment Tools.....	4
Summary of Initiatives.....	5
1. Construction and Building Management.....	6
2. Water Resources.....	7
3. Energy Efficiency.....	8
4. Stormwater Quality Management.....	10
5. Indoor Environment Quality.....	11
6. Sustainable Transport.....	11
7. Operational Waste Management.....	12
8. Urban Ecology.....	12
9. Materials.....	13
10. Result in Summary & Implementation.....	14
Appendix 1 – WSUD Report.....	16
Appendix 2 – WSUD Maintenance Manual.....	29
Appendix 3 – Green Star VOC Limits.....	35
Appendix 4 – Daylight Hand Calculation.....	38
Appendix 5 – BESS Report.....	41

## Document History

Version	Date	Status	Author	Approved
0	10/02/2026	First Issue	DM	JO
1	19/03/2026	Updated as per comments	DM	JO

### **IP and Copyright Disclaimer**

This report is protected by Australian copyright law and is the property of MSC. The information contained in this report is intended for the sole use of MSC's client and is not to be shared or distributed to any third party without prior written permission from MSC.

This document, including all content, materials, and information contained herein, is the intellectual property of MSC and is protected by Australian intellectual property laws, including copyright and trademark.

## Introduction & Council's Requirements

Melbourne Sustainability Consultants has been commissioned to provide guidance on achieving environmentally Sustainable Development outcomes for the proposed warehouse/office development located at 309 Bellerine Street, South Geelong.

The assessment is being carried out in compliance with Greater Geelong City Council's sustainability requirements specifically addressing Planning Policy Clause 15.01-2L *Environmentally Sustainable Development*.

Clause 15.01-2L of the policy outlines the key categories that the City of Greater Geelong has identified as crucial to be addressed in the assessment. These categories include Energy Performance, Water Resources, Stormwater Management, Indoor Environment Quality, Construction, Building & Waste Management, Building Materials, Transport, and Urban Ecology.

Stormwater quality management and its impact on the environment have been acknowledged by the City of Whittlesea. As per the requirements of Clause 53.18 *Stormwater Management in Urban Development*, this report presents a solution to address the quality aspect of stormwater management.

## Site & Proposed Development Description

The 836m<sup>2</sup> site is located at 309 Bellerine Street, South Geelong within Greater Geelong local authority. The site is currently as shown below:



*Figure 1: Site location and surroundings sourced from Google Maps.*

The proposed development is comprised of three shed units, one with a showroom area on ground floor, one with a caretaker residence on upper level and the last one with an office on first floor.

## ESD Assessment Tools

### **BESS**

BESS has been built and is maintained by local governments and is the only dedicated tool in Victoria for assessing sustainable design at the planning permit stage.

BESS evaluates the energy and water efficiency, thermal comfort, and overall environmental sustainability performance of new buildings or modifications. It was created to ensure that new development adheres to sustainability requirements as part of a planning permit application.

A BESS assessment has been conducted for the proposed development, providing a benchmark for the level of sustainability achieved by the project in line with the SDAPP 10 Key Sustainable Building Categories.

Each target area within the BESS tool typically receives a score ranging from 1% to 100%. To meet the energy, water, stormwater, and IEQ requirements, a minimum score of 50% is necessary. An overall project score of 50% represents 'Best Practice,' while a score above 70% represents 'Excellence.'

### **BLUE FACTOR**

The BLUE FACTOR calculator is a tool developed by The Department of Energy, Environment and Climate Action (DEECA) and Microburst Software to assist with the design and assessment of stormwater management systems. The calculator enables users to determine the effectiveness of stormwater treatment measures in removing pollutants from stormwater runoff, thereby protecting waterways and aquatic ecosystems. Blue Factor is the successor to STORM and can already be used to replace it as an accepted tool.

The Blue Factor assessment can be found in Appendix 1.

## Summary of Initiatives

Initiatives listed below should be reflected on TP drawings either graphically on the plan (e.g. bike spaces, RWT etc.) or with a clear note. All WSUD initiatives listed in Appendix 1 should be clearly noted on drawings including all areas diverting to the proposed treatment (e.g. RWT, raingarden etc.) – Refer to Appendix 1.

Category	Requirement
<b>Management</b>	80% of all construction and demolition waste to be diverted from landfill
	Separate utility meter for each tenancy
<b>Water Efficiency</b>	Minimum WELS rating of fittings and fixtures: 4 Star Toilets / 5 Star Taps / 4 Star (6.0-7.5 L/min) Showerhead
	4,000L tanks for each unit collecting water from the roof – Water to be used for toilet flushing in each unit
<b>Energy Efficiency</b>	NCC 2022 section J commitment to meet requirement with 10% increase on minimum floor and ceiling insulation
	Minimum 7.0 Star NatHERS rating for residence
	Illumination power densities to meet NCC 2022 section J7D3 requirements for offices/shed and Maximum 4 W/m <sup>2</sup> lighting density within the residence
	Sensors (motion, daylight, timers) for external and common area lighting
	Electric System chosen within one star of the best available product in the range at the time of purchase or 15% most efficient available products if no star rating is available
	HVAC system chosen within one star of the best available product in the range at the time of purchase or 15% most efficient available products if no star rating is available
	3kW Solar PV for each unit
<b>Stormwater</b>	Part of unit 1 driveway to divert to raingarden
<b>IEQ</b>	All paint, adhesives, sealants and flooring to be low VOC – refer to Appendix 2 for limits
	All engineered wood will be low formaldehyde with E0 or better certification
<b>Waste</b>	2-bin system (Rubbish, Recycling)
<b>Urban Ecology</b>	At least 5% of the site is covered with vegetation
<b>Materials</b>	Timber framing if used to be certified PEFC, AFS or FSC – No rainforest timber to be used
	Steel to be sourced from steel maker with ISO 14001 facility a member of the World Steel Association's (WSA) Climate Action Program (CAP).
	Carpet and underlay with third-party sustainable certification (GECA, Carpet institute ECS etc.)

## 1. Construction and Building Management

Effective construction and building management practices are crucial for sustainable development. By minimizing construction waste and effectively monitoring building performance, these practices can significantly reduce the environmental impact of the development and enhance its long-term sustainability.

Initiative	Description	Reference
<b>Metering and Monitoring</b>	Separate utility meters (water and electricity) will be provided for the commercial tenancies.	BESS Man 3.2
<b>Construction Waste Management</b>	On-site staff will receive a construction waste management plan during a site orientation session to minimise on-site waste generation and ensure proper disposal. A minimum of 80% of all construction and demolition waste created on-site will be reused or recycled.	N/A
<b>Construction Environmental Management</b>	<p>The builder will identify environmental risks associated with construction and implement management strategies such as effective erosion and sediment control measures throughout construction and operation.</p> <p>They will also ensure that earthworks are staged appropriately to avoid bare earthworks in high-risk areas of the site during periods of dominant rainfall.</p>	Clause 53.18

## 2. Water Resources

Maximising water efficiency in developments helps conserve water resources, reduces the strain on local water systems, and lower water bills for homeowners, making it an environmentally responsible and economically beneficial choice for developers. Additionally, implementing water-efficient practices and technologies can also contribute to a more sustainable and resilient community.

Initiative	Description	Reference
<b>Fixtures and Fittings</b>	<p>The development will be provided with efficient fittings and fixtures. This will all be for a reduction of potable water use onsite. The following minimum Water Efficiency Labelling Scheme (WELS) star rating will be specified:</p> <ul style="list-style-type: none"> <li>• 4-Star Toilets</li> <li>• 5-Star Taps (Kitchen and bathrooms)</li> <li>• 4-Star (6.0-7.5 L/min) Showerheads for apartments and office if provided</li> </ul> <p>All appliances provided as part of the base building will be chosen within one WELS star of the best available:</p> <ul style="list-style-type: none"> <li>• 5-Star Dishwasher</li> </ul>	BESS Wat 1.1
<b>Rainwater Collection and use</b>	<p>The roof of each unit will have rainwater runoff collected and stored in a 4,000L tank for each unit.</p> <p>Rainwater collected will be utilised for toilet flushing, significantly reducing the development's stormwater impact and aiding in compliance with the MUSIC calculator (refer to Appendix 1).</p>	BESS Wat 1.1 BESS Storm 1.1

### 3. Energy Efficiency

Maximizing energy efficiency in developments reduces greenhouse gas emissions and lowers utility costs for homeowners, making it an environmentally responsible and economically beneficial choice for developers. In addition, energy-efficient buildings are often more comfortable and healthier to live in, improving the quality of life for occupants.

Initiative	Description	Reference
<b>NatHERS Commitment – Thermal Performance</b>	<p>The building approval stage will include the completion of energy ratings, with a commitment to meeting energy efficiency requirements of a minimum <b>7.0-Star energy rating for the residence.</b></p> <p>This will be accomplished by installing appropriate insulation levels in external walls, roofs, and floors, as well as using efficient glazing in all habitable rooms. 7.0-star results have been assumed in BESS.</p>	<p>BESS Ene 1.2 BESS Ene 2.1 BESS Ene 2.2 BESS Ene 2.3</p>
<b>NCC Section J Commitment</b>	<p>A section J (NCC 2022) DTS assessment will occur for the development (prior to construction) with the following commitments:</p> <ul style="list-style-type: none"> <li>• 10% improvement on NCC 2022 floor and ceiling insulation levels (Total R-Value);</li> <li>• Wall insulation and glazing system within NCC 2022 DTS requirements.</li> <li>• 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 chosen within the best 15% of available products if no star rating is available; and</li> <li>• Water heating system to be chosen within one star of the best available product in the range at the time of purchase or the 15% most efficient available products if no star rating is available.</li> </ul> <p>Alternatively, an NCC JV3 modelling will be undertaken prior to construction. The JV3 modelling will demonstrate compliance with building fabric requirement when compared to an ‘improved reference building’ that will include the 10% improvement on NCC 2022 DTS floor and ceiling insulation levels.</p> <p>The JV3 approach described above would produce a lower score under BESS Energy 1.1 than</p>	<p>BESS Ene 1.2 BESS Ene 2.1 BESS Ene 2.3</p>

Initiative	Description	Reference
	the DTS approach however the BESS assessment submitted would maintain BESS compliance with the slightly decreased score.	
<b>Hot water System</b>	An electric instantaneous or storage system will be installed for the development/each tenancy. The system will be chosen within one star of the best available whichever is greater.  System efficiency should be chosen within the 15% most efficient available products if no star rating is available.	BESS Ene 3.2
<b>HVAC System</b>	Heating and cooling will be provided with VRF, split or packaged unit for commercial space.  Heating and cooling in the units will be provided with a reverse-cycle air-conditioner for residence.  HVAC unit will be chosen within one star of the best available (minimum 3 Star in residence) in a similar range at the time of purchase or will be chosen with COP/EER within 15% of the best available product if no star rating is available.	BESS Ene 2.3
<b>All Electric Development</b>	The development will be all-electric and will not have a gas connection. This will align the development with Councils and state targets for net zero and reduction of fossil fuel usage.	BESS Ene 2.6
<b>Internal Lighting</b>	LED lighting will be implemented throughout each unit resulting in lower energy consumption for artificial lighting in residence.  Each residential unit will reduce lighting power densities by 20% from the NCC requirement (<math><4W/m^2</math>).  The commercial part of the development will commit to meet the maximum illumination power densities from NCC 2022 part J7D3.  Additionally, the utilisation of light internal colours will enhance daylight penetration, leading to a decreased reliance on artificial lighting.	BESS Ene 3.6 BESS Ene 3.7
<b>Lighting Controls and External Lighting</b>	LED lighting will be implemented for all external lighting.  External lighting, common areas and spaces used intermittently will be controlled with motion	BESS Ene 3.7

Initiative	Description	Reference
	sensors and/or daylight sensors reducing overall use and energy consumption. Ventilation in these areas will also be controlled with these sensors.	
<b>Solar PV System</b>	Each unit will have a 3kW solar photovoltaic system installed on its roof to generate renewable energy.  This measure will reduce energy consumption for the development.	BESS Ene 4.5

## 4. Stormwater Quality Management

WSUD (Water Sensitive Urban Design) is crucial for developments because it helps manage stormwater runoff, reduces flooding risks, and improves water quality by using natural systems to filter and treat water. Additionally, WSUD can enhance the aesthetic value of a development by incorporating green infrastructure and providing green spaces for occupants to enjoy.

Initiative	Description	Reference
<b>Rainwater Collection and use</b>	The roof of each unit will have rainwater runoff collected and stored in a 4,000L tank for each unit.  Rainwater collected will be utilised for toilet flushing, significantly reducing the development's stormwater impact and aiding in compliance with the MUSIC calculator (refer to Appendix 1).	BESS Wat 1.1 BESS Storm 1.1
<b>Raingarden</b>	Part of the unit 1 driveway will have rainwater runoff channelled towards a 2m <sup>2</sup> raingarden.  The raingarden location will be confirmed by the civil engineer once engaged however it should be away from footings or boundary to avoid flooding issues (minimum 300mm).  Implementation of raingarden will actively treat stormwater pollution and help towards achieving compliance with WSUD requirements as described in Appendix 1.	BESS Storm 1.1

## 5. Indoor Environment Quality

IEQ (Indoor Environmental Quality) is essential for development because it affects the health, comfort, and well-being of occupants by addressing factors such as air quality, temperature, lighting, and noise levels. Providing a high-quality indoor environment can also increase the value and desirability of a development, leading to higher occupancy rates and property values.

Initiative	Description	Reference
<b>Daylight Access Office &amp; showroom</b>	<p>Light internal colours will be used for the development which will result in better internal reflection of natural light, enhancing the penetration of daylight through windows or other openings.</p> <p>Large windows will be installed in office which will increase natural light access. Windows will be provided on multiple façades wherever possible and room depth will be limited to improve daylight access even further.</p> <p>The development has met BESS requirements overall – Refer to the daylight hand calculation prepared in Appendix 4.</p>	BESS IEQ 1.4
<b>Natural Ventilation</b>	<p>Both the residence and office space will be provided with opening on different façade allowing for effective cross-flow ventilation.</p> <p>Shed has been assumed to be naturally ventilated via the proposed large roller doors which will open regularly.</p>	BESS IEQ 2.3
<b>Low VOC and Low Formaldehyde</b>	<p>All paints, adhesives and sealants and flooring should not exceed the limits outlined in Appendix 3. Alternatively, products will be selected with no VOCs.</p> <p>All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better or with no formaldehyde. Providers such as Polytec and Laminex Australia offer E0 or better products in their range.</p>	BESS IEQ 4.1

## 6. Operational Waste Management

Effective operational waste management is vital for developments to minimise the amount of waste generated, reduce environmental impacts, and improve sustainability by promoting recycling and composting. Implementing efficient waste management practices can also lower operating costs, increase efficiency, and enhance the overall liveability of the development.

Initiative	Description	Reference
<b>Operational Waste</b>	<p>The development will be provided with a two-bin system including general and recycling.</p> 	BESS Waste 2.1

## 7. Urban Ecology

Incorporating urban ecology principles into development promotes biodiversity, provides ecological services such as air and water purification, and enhances the overall health and well-being of residents by connecting them with nature. Additionally, creating sustainable and resilient urban ecosystems can also help mitigate the impacts of climate change and support the long-term viability of the development.

Initiative	Description	Reference
<b>Vegetated Area</b>	The proposed development will be proposed with landscaped areas. This will provide an enjoyable working environment.	BESS Eco 2.1

## 8. Materials

Choosing the right materials for a development is crucial as it impacts the durability, energy efficiency, and overall sustainability of the buildings. Thoughtful material selection can minimize environmental impacts, improve indoor air quality, and contribute to the long-term value and desirability of the development.

Initiative	Description	Reference
<b>Sustainable Timber</b>	No rainforest timber will be used on site.  Timber framing (if used on site) will be procured from accredited sources such as Forest Stewardship Council (FSC), Program for the Endorsement of Forest Certification (PEFC) or Australian Forestry Scheme (AFS).	Clause 15.01-2L
<b>Carpet</b>	Wherever used, carpet and carpet underlay will be chosen with as third party certification such as Global GreenTag, GECA or Carpet Institute of Australia Limited, Environmental Certification Scheme (ECS).	Clause 15.01-2L
<b>Steel</b>	Steel for the development (structural and reinforcing) will be procured from a responsible steel maker.  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).	Clause 15.01-2L

## 9. Result in Summary & Implementation

The development will comply with the BESS and WSUD requirements by implementing all measures, as stated in this report. All the measures included in this report have demonstrated their efficiency and are easy to upkeep, with any faults promptly noticeable to the development's occupants. This approach ensures the development's sustainability in the long run, as the installed systems will be maintained and functional throughout the building's life cycle.

All initiatives listed in the report will be implemented by the relevant design team member at the relevant stage of the development. An implementation schedule has been prepared as follows – Full detail for each initiative is available in the body of the report (hyperlink):

### ESD Implementation Table

Initiative	Responsibility	Stage
Metering and Monitoring	Services Engineer Architect	Design Development
Construction Waste Management Plan – 80% of waste diverted from landfill	Head Contractor	Construction
Construction Environmental Management Plan	Head Contractor	Construction
Water Fixtures and Fitting – Minimum WELS rating	Architect Head Contractor	Design Development
Rainwater Collection and Reuse	Architect Civil Engineer	Design Development
NCC Section J commitment – 10% improvement on floor and ceiling minimum insulation	Section J Consultant	Design Development
Hot Water System chosen within one star or 15% most efficient	Services Engineer Architect	Design Development
HVAC System chosen within one star of 15% most efficient	Services Engineer Architect	Design Development
Internal Lighting Power – LED with Max 4W/m <sup>2</sup> for apartment	Services Engineer Architect	Design Development
Internal Lighting Power in line with NCC 2022 section J7D3 for commercial	Services Engineer Architect	Design Development
External and common area Lighting – LED with sensors	Services Engineer Architect	Design Development
Solar PV System – Minimum 3kW per unit	Contractor Architect	Design Development

Initiative	Responsibility	Stage
Low VOC and Low Formaldehyde Products	Architect Head Contractor	Design Development Construction
Two-bin system	Architect Waste Consultant	Design Development
Carpet commitment to sustainable certification	Architect Head Contractor	Design Development
Steel commitment to responsible steel maker	Architect Head Contractor	Design Development
Timber commitment to certified plantations	Architect Head Contractor	Design Development



# Appendix 1 – WSUD Report

To address Clause 15.01-2L and 53.18, a Water Sensitive Urban Design (WSUD) assessment of the proposed development must occur.

Under Clause 53.18, WSUD assessment and associated proposed stormwater management system should be designed to:

- Meet the current best practice performance objectives for stormwater quality as contained in the Urban Stormwater - Best Practice Environmental Management Guidelines (Victorian Stormwater Committee, 1999). Currently, these water quality performance targets are:
  - 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.
- Minimise the impact of chemical pollutants and other toxicants including by, but not limited to, bunding and covering or roofing of storage, loading and work areas.
- Contribute to cooling, improving local habitat and providing attractive and enjoyable spaces.

By identifying the impervious surfaces within the site and implementing treatments to mitigate the impacts of stormwater leaving the site, the proposed development has successfully fulfilled the objectives listed above.

The development was evaluated using the Blue Factor tool, a widely accepted tool in the industry, to verify compliance with the aforementioned best practice targets. To meet the required standards, the development must attain a minimum compliance score of 100%

### **1. Stormwater Quality Management Strategies & Site Demarcation**

To achieve stormwater management objectives, it will be necessary to put in place stormwater treatment measures. The upcoming section outlines the surfaces that necessitate treatment and the specific treatment required. Effective management of stormwater flows in the building area will be crucial for the building's overall performance and its ability to meet stormwater management goals.

The following treatment will be implemented on-site:

Surface	Treatment	Area	Description
Roof U1	Rainwater Tank	244m <sup>2</sup>	The roof runoff will be diverted into a 4,000L rainwater tank. The rainwater will be used for <b>toilet flushing</b> .
Roof U2	Rainwater Tank	127m <sup>2</sup>	The roof runoff will be diverted into a 4,000L rainwater tank. The rainwater will be used for <b>toilet flushing</b> .
Roof U3	Rainwater Tank	127m <sup>2</sup>	The roof runoff will be diverted into a 4,000L rainwater tank. The rainwater will be used for <b>toilet flushing</b> .
Driveway Unit 1	Raingarden	97m <sup>2</sup>	<p>Part of the exposed driveway will be diverted to a minimum of 2m<sup>2</sup> of raingarden.</p> <p>Raingarden should be constructed as per Melbourne Water Guidelines for <a href="#">Inground Raingarden</a></p> <p>Raingarden must be installed away from the boundary or footings due to flooding potential (minimum 300mm).</p>
Landscaped Areas	No treatment	51.7m <sup>2</sup>	<p>Part of the site will be designed as permeable.</p> <p>This will include landscaped areas.</p>
Untreated Impervious Areas	No treatment	189.3m <sup>2</sup>	<p>Part of the site will be left untreated before being released at the legal point of discharge.</p> <p>This will include terraces etc.</p>

The development has prioritized maximizing permeable areas, resulting in decreased stormwater outflows from the site. Additionally, the proposed development includes vegetated areas, which not only reduces the heat island effect but also improves the local habitat.

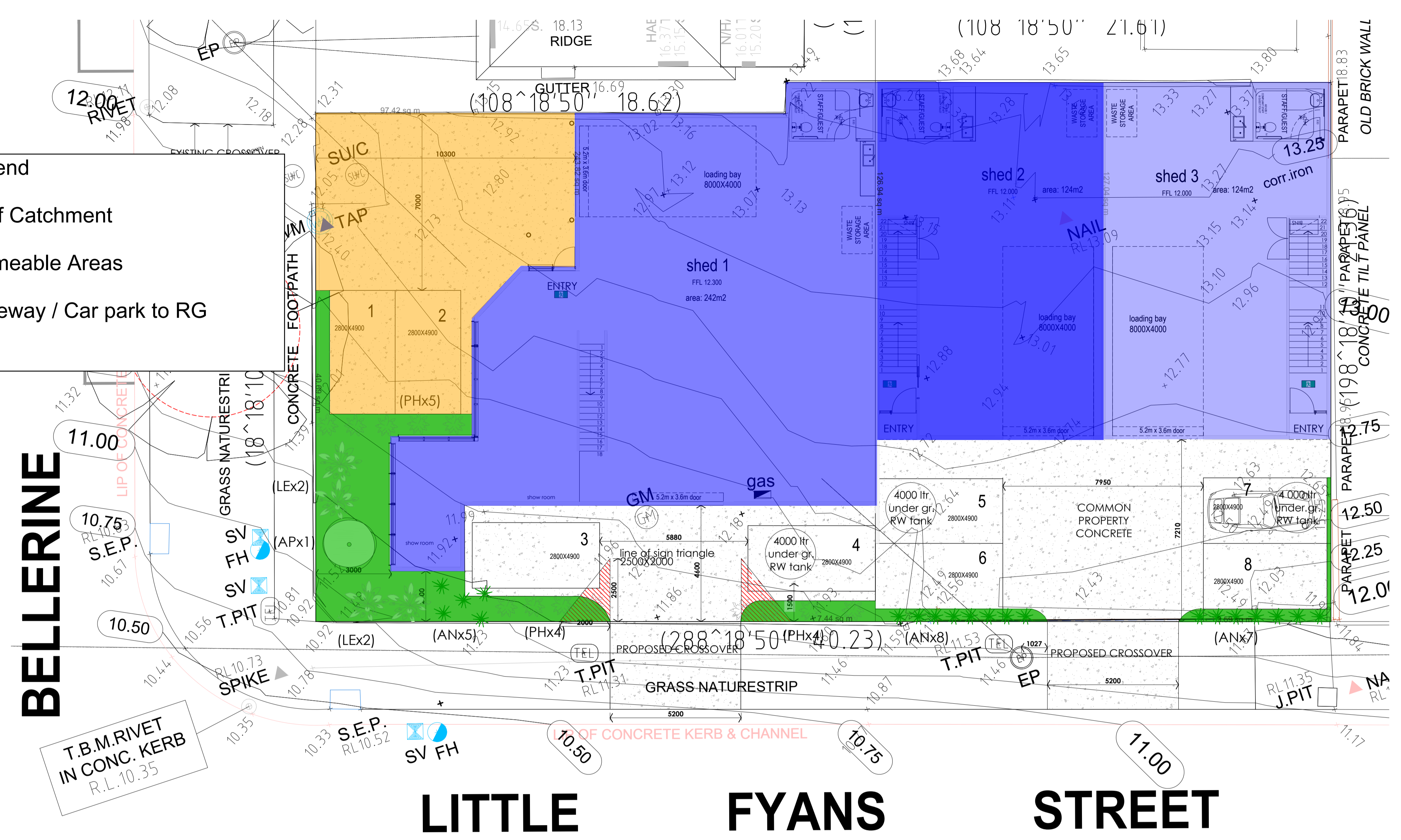
## **2. WSUD Catchment Plan**

Please refer to the next page for the full WSUD catchment plan including all treatment and areas included above.

date commenced:	XX / XX / 2020			
date first issued:	XX / XX / 2020			
rev	date	drawn	chk	description

### WSUD Legend

- Roof Catchment
- Permeable Areas
- Driveway / Car park to RG



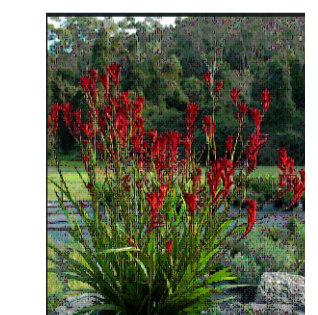
PRELIMINARY ISSUE  
not to be used for construction

PROPOSED LANDSCAPE PLAN  
SCALE 1:100

#### PLANTING LEGEND

	<b>SPECIFICATION</b> ACACIA PALMATUM (APT) (CANOPY TREE) <b>COMMON NAME</b> Japanese Maple <b>MATURE SIZE</b> 3.0m HIGH x 3.0m WIDE <b>QUANTITY REQUIRED</b> 1
	<b>SPECIFICATION</b> KANGAROO PAW <b>COMMON NAME</b> Kangaroo Paw <b>MATURE SIZE</b> 1.0m HIGH x 1.0m WIDE <b>QUANTITY REQUIRED</b> 28
	<b>SPECIFICATION</b> PHORMIUM (PH) <b>COMMON NAME</b> Moon Sunrise <b>MATURE SIZE</b> 1.0m HIGH x 0.8 - 1.0m WIDE <b>QUANTITY REQUIRED</b> 7
	<b>SPECIFICATION</b> PROSTANTHERA SEBERI (PS) <b>COMMON NAME</b> Hollow Mint Bush <b>MATURE SIZE</b> 1.0m HIGH x 1.0m WIDE <b>QUANTITY REQUIRED</b> 4
	<b>SPECIFICATION</b> EUCADENDRON (EE) <b>COMMON NAME</b> None <b>MATURE SIZE</b> 1.5m HIGH x 1.5m WIDE <b>QUANTITY REQUIRED</b> 8

- Proposed Grass Surface**  
Cultivate subsoil to 200mm and spreading 50mm selected topsoil and Tall Fescue grass seed.
- Proposed Concrete**  
100mm depth coloured or exposed aggregate concrete driveway.
- Proposed woodmulch surface**  
Garden beds to be cultivated to 200mm depth, 100mm Garden Blend loam, and mulched with 75mm depth.
- Footpath**



#### PREPARING A GARDEN BED FROM A BUILDING SITE

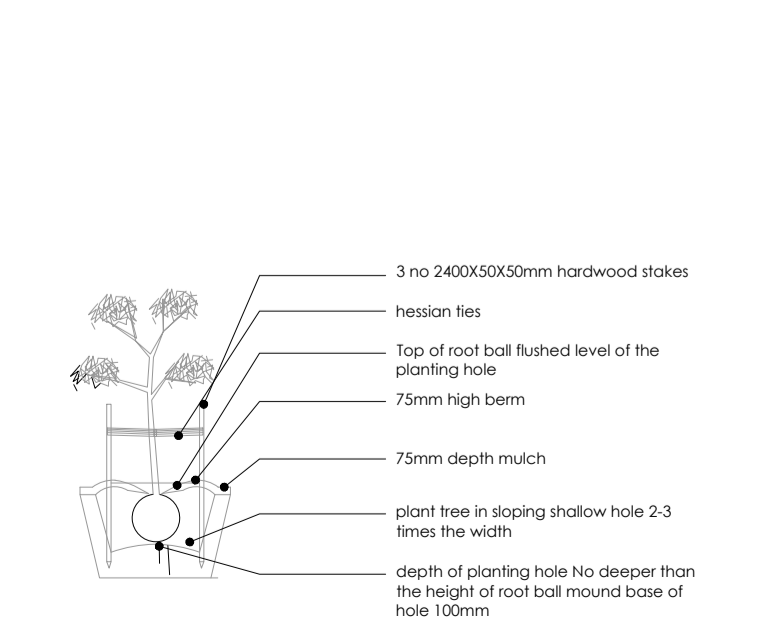
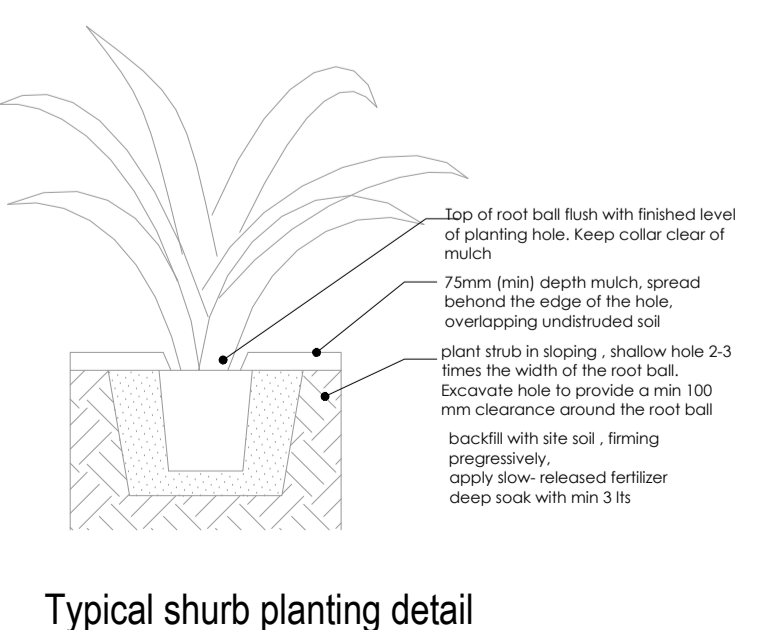
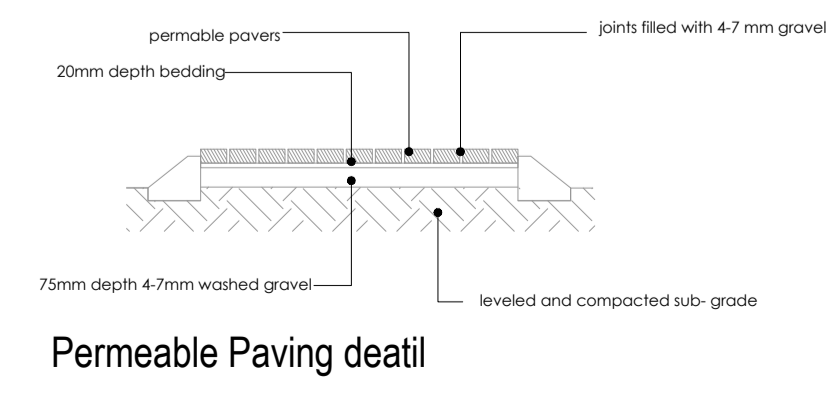
- Cleaning:** Clean the site of debris and weeds.
- TPZ:** If soil is contaminated by paint or concrete wash which shall be avoided it must be dug out and removed. If in a tree protection zone (TPZ) more reason to prevent it shall be hand excavated to avoid cutting roots. The topsoil shall be replaced with soil or imported topsoil that complies AS4419:20 www.gardens.org.au.
- Grading and Drainage:** In areas with existing topsoil that will be paved the topsoil can be excavated (unless in TPZ) and stockpiled - to be later used on garden beds.
- Grade the area into garden beds (slightly higher) and lawn or gravel areas.** Garden beds shall be edged with sustainable source material eg treated pine.
- Check the drainage of the area by running a sprinkler for 5-10 min (check water restrictions) and look where the water flows, noting any water tracks or ponding in areas.** Adjusted grading accordingly. Garden beds, paths and lawn or gravel areas shall be drain towards a drainage grate pit or rain garden.
- Drainage issues may be addressed by the creation of a swale, which can be covered with rock pieces or a sump pit filled with crushed rock wrapped in porous geotextile and covered with lawn or stone.**
- Improving soils:** Existing garden beds can be prepared with added organic material such as well rotted manure or materials from a plant and animal source such as soil improvers or compost and prepared to AS 4454:2003. These can just be top dressed / placed over the top of the soil and then covered with mulch. If there is no existing topsoil then import topsoil that complies with AS4419:2003 shall be used with organic mulch on top.
- Hard city subsoil can be fractured or ripped to break them down.**
- soil excavation shall note be carried in a TPZ**
- Clay soils shall never be cultivated in any way when they are wet**
- Use of plastic weed mats, sold or woven are inappropriate as they deprive soil of oxygen**
- Garden beds shall be mulched to a depth of 75mm**

#### PREPARING A GARDEN BED FROM A BUILDING SITE

- The trees Protection Zone (TPZ) radius shall be determined by measuring the trunk diameter (DBH) of the 1:4 above the ground in metres and multiplying by 12. If the tree is multi-trunked the DBH is the square root of the sum of the squares of the diameter of each trunk. The TPZ is an area isolated from construction disturbance which includes excavation, compacted fill and machine trenching so that the trees remains viable. Any root excavation within the TPZ shall be avoided and is to be done during the design and construction stage.
- The TPZ is to be fenced and clearly marked at all times.
- Any underground services installation shall be boxed within TPZ
- Supplementary watering shall be provided to all trees throughout any dry or windy periods during and after construction process.
- Any Pruning required must be carried out by a trained and competent Arborist to comply with AS 4373:1996 Pruning of amenity trees
- Activities to be restricted within the TPZ.

#### MAINTENANCE NOTES

- Watering:** Plants shall be watered immediately after planting, then weekly for the first month, then fortnightly for the first 3 months. watering is unnecessary if there has been enough recent rain. Additional watering is required on days over 30 degrees.
- Weeding:** Removal of weeds by hand and / or by glyphosate preparation once a month or as required.
- Pruning:** Shrubs and young trees shall be pruned at 3 months, 6 months and then yearly for dead diseased branches. Check plants for damage once a month and pruning stems to ensure a single main trunk.
- Stakes:** shall be removed after one year.
- Post and disposed cortical:** Check plants for damage once a month and used relevant sprays to manufacture recommendations.
- Fertiliser:** a general organic low phosphorous fertiliser shall be placed under mulch.
- Watering:** Moving every 3 to 6 days depending on time of year and a height of 50mm.
- General:** Remove rubbish and replace dead plants with the same species.



Client approval signature:  
stage:  
designed by:  
suite 3/133 SHANNON AVE  
MANI FOLD HEIGHTS VIC 3218  
PH: 5221 6613  
FAX: 5221 6414  
email: tonypreiato@pipelne.com.au

**PLANNING**

tonypreiato ASSOCIATES  
building designers

project:  
**WAREHOUSE**

site address:  
**309 BELLARINE STREET  
GEELONG**

client:  
**CLIENT**

drawing title:  
**LANDSCAPE**

date: 25/11/2050  
scale: 1:100  
sheet no: 04 OF 05  
file no: 251952

drawn: TP  
checked: TP  
rev no: -

### **3. WSUD Assessment Results**

All treatment measures and associated areas described above have been input into the BLUE FACTOR tool and the following results have been achieved:

**Please note that mean annual runoff volume infiltrated cannot be achieved in Blue Factor since permeable areas (where water could infiltrate) are not considered in the calculation. Permeable areas are only input in catchment to demonstrated that all areas on site have been accounted for. This was confirmed by blue Factor developer.**

**TSS have not achieved full compliance as it is difficult to achieve compliance with these requirements on these types of projects where TSS pollutant are already low. Reducing significantly the level of something that is already very low is complicated and achieving full compliance with these items (especially TSS) would require extensive additional treatment to be put in place (e.g. entire driveway permeable, raingardens) which would bring constructability issues, cost issue etc. for minor real-life impact. This is in line with DEECA's position.**

Project # 2232A1C0 - 309 Bellerine Street, South Geelong  
 309 Bellerine St, South Geelong VIC 3220, Australia  
 10 February 2026 1:14 p.m.



### 309 Bellerine Street, South Geelong



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	309 Bellerine Street, South Geelong
Street address	309 Bellerine St, South Geelong VIC 3220, Australia
Municipality	Greater Geelong
Site area	836 m <sup>2</sup>
Planning Number	

#### Flow and pollutant load reductions

Item	Result	Target
Mean annual runoff volume harvested or evapotranspired (%)	31%	>28%
Mean annual runoff volume infiltrated or filtered (%)	0%	>9%
Total suspended solids (%)	62%	>80%
Total phosphorus (%)	51%	>45%
Total nitrogen (%)	45%	>45%
Total gross pollutants (%)	74%	>70%

#### Water treatment

##### Catchments

**Roof U1** 244m<sup>2</sup>

**Roof U2** 127m<sup>2</sup>

**Roof U3** 127m<sup>2</sup>

**Permeable Areas** Pervious (garden and lawn), 51.7m<sup>2</sup>

**Untreated Impervious Areas** Paved, 189.3m<sup>2</sup>

**Car Park / Driveway U1** Paved, 97m<sup>2</sup>

## Treatments

### **Rainwater Tank 1**

Rainwater tank retention volume in kilolitres: 4

### **Rainwater Tank 2**

Rainwater tank retention volume in kilolitres: 4

### **Rainwater Tank 3**

Rainwater tank retention volume in kilolitres: 4

**Raingarden 1** Area: 2 m<sup>2</sup>, Extended detention depth: 0.3 m,  
Submerged zone depth: 0.3 m, Site soil type: Lined

## Buildings & dwellings

**Unit 1** Non-Residential BCA Class 5 - Commercial/Office,  
6 employee(s)

**Unit 2** Non-Residential BCA Class 5 - Commercial/Office,  
3 employee(s)

**Unit 3** Non-Residential BCA Class 5 - Commercial/Office,  
3 employee(s)

### Configuration 1

**Roof U1** 244m2

**Rainwater Tank 1**

Rainwater tank retention volume in kilolitres: 4,

**Unit 1** Non-Residential BCA Class 5 - Commercial/Office,  
6 employee(s)

### Configuration 2

**Roof U2** 127m2

**Rainwater Tank 2**

Rainwater tank retention volume in kilolitres: 4,

**Unit 2** Non-Residential BCA Class 5 - Commercial/Office,  
3 employee(s)

**Configuration 3**

City of Greater Geelong, Statutory Planning - Date Received 17/04/2026

**Roof U3** 127m<sup>2</sup>**Rainwater Tank 3**

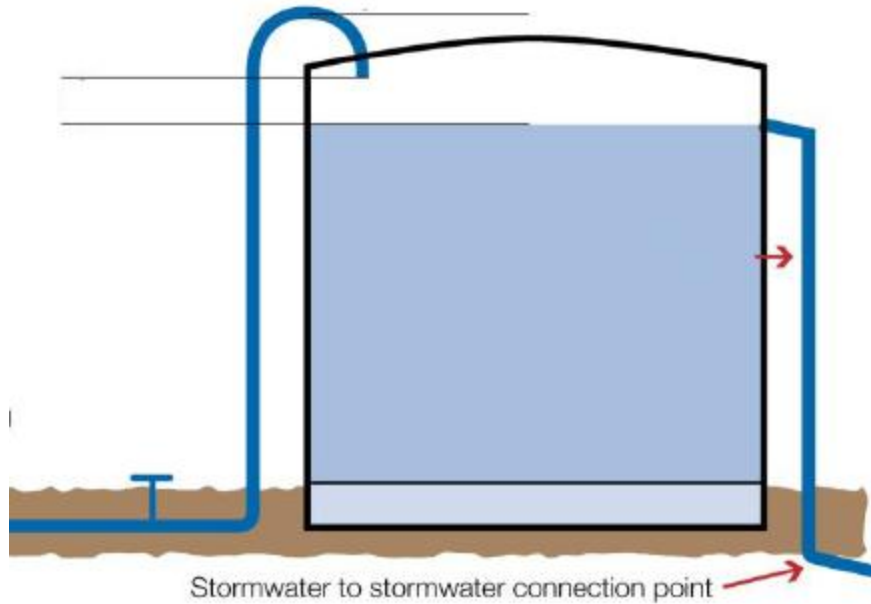
Rainwater tank retention volume in kilolitres: 4,

**Unit 3** Non-Residential BCA Class 5 - Commercial/Office,  
3 employee(s)**Configuration 4****Car Park / Driveway U1** Paved, 97m<sup>2</sup>**Raingarden 1** Area: 2 m<sup>2</sup>, Extended detention depth: 0.3 m,  
Submerged zone depth: 0.3 m, Site soil type: Lined,

#### 4. Proposed Treatment Typical Cross-Section

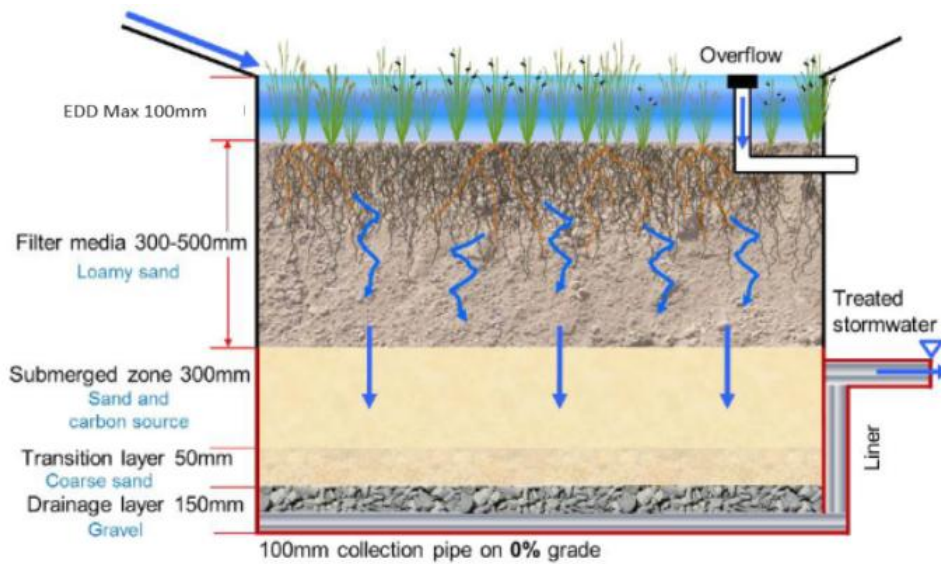
This section will include a typical cross-section of all WSUD treatments proposed in the development.

##### a. Rainwater Tanks



*Figure 2: Typical Rainwater tank Cross-Section.*

##### b. Raingarden



*Figure 3: Raingarden Typical Cross-Section*

#### **Acceptable raingarden design**

- standard system with 300-500mm filter media depth
- including a submerged zone system and 300mm filter depth

- standard system with filter media depth of 500mm where surrounding soil has a high infiltration rate

### **Avoid**

- standard raingardens with filter media depth less than 300mm
- raingardens downstream of a wetland or an oversized sedimentation basin

Note: All systems should be designed as per Adoption Guidelines for Stormwater Biofiltration Systems (FAWB, 2009).

### **Plant selection**

This should be guided by expert opinion, based on the particular project conditions. The plant species that are commonly used in raingardens can be grouped into three general categories:

<b>Category</b>	<b>Example plant species</b>
Tolerant of both wet and dry conditions once established	<i>Carex appressa</i> (tall sedge)
Tolerant of dry conditions once established	<i>Ficinia nodosa</i> <i>Lomandra longifolia</i> <i>Juncus amabilis</i>
Prefer more constant conditions without wet/dry extremes	<i>Goodenia ovate</i> <i>Juncus flavidus</i>

Note: Other plant species may be appropriate for a particular system and these should be guided by expert opinion.

<b>Scientific Name</b>	<b>Common name</b>	<b>Height (m)</b>	<b>Width (m)</b>	<b>Density (m<sup>2</sup>)</b>
<i>Acacia implexa</i> *	Lightwood	8	5	1
<i>Acacia melanoxylon</i> *	Blackwood	12	8	1
<i>Allocasuarina cunninghamiana</i> *	River Sheoak	15	8	1
<i>Carex appressa</i>	Tall Sedge	0.5-1.2	.05-1	4
<i>Callistemon sieberi</i>	River Bottlebrush	4	2	1
<i>Dianella admixta</i>	Black-anther Flax-lily	0.3-0.8	0.5-1.5	6
<i>Dianella longifolia</i>	Smooth Flax-lily	0.5	0.5	6
<i>Dianella tasmanica</i>	Tasman Flax-lily	0.75	1	4
<i>Ficinia nodosa</i>	Nobby Club-rush	0.5-1.5	0.6-2.0	5
<i>Gahnia radula</i>	Thatch Saw-sedge	1.5	1	4
<i>Juncus amabilis</i>	Hollow rush	0.2-1.2	0.2-0.5	6
<i>Juncus flavidus</i>	Yellow Rush	0.4-1.2	0.2-1	4
<i>Lepidosperma laterale</i> var. <i>laterale</i>	Variable Sword-sedge	1	0.4-1	4
<i>Lomandra filiformis</i> ssp. <i>Filiformis</i>	Wattle Mat-rush	0.3	0.3	6
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	1	1	4
<i>Lomandra nana</i>	Dwarf Mat-rush	1.5	10-20	5
<i>Myoporum parvifolium</i>	Creeping Boobialla	20-30	300	4
<i>Poa labillardieri</i>	Common Tussock-grass	0.3-0.8	1.3	4

\*Canopy trees are only suitable in vegetation over 6m<sup>2</sup> with a minimum width of 2m.

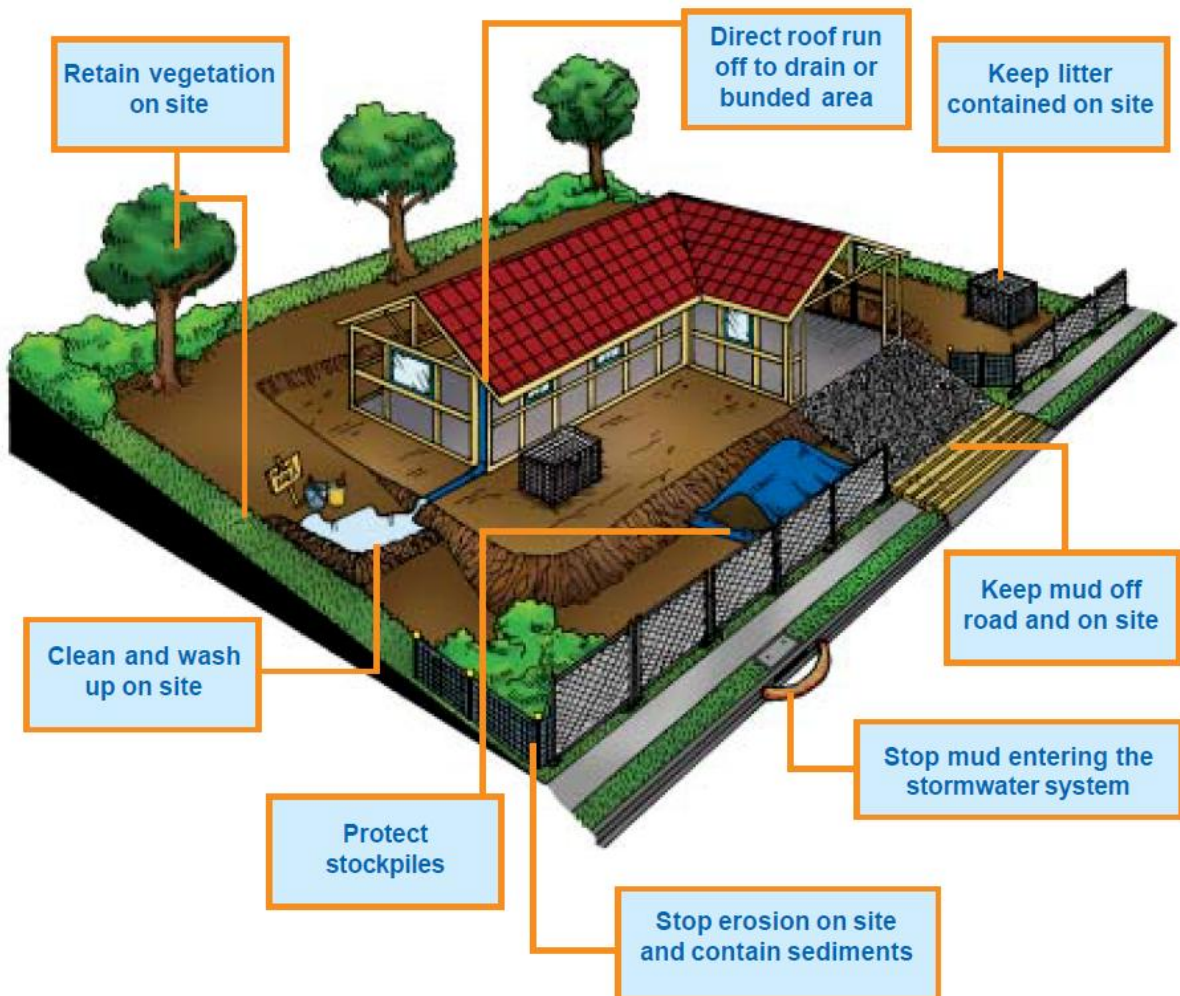
At least 50% of the plants chosen for a bioretention system should have the following characteristics for effective nutrient removal (FAWB, 2009):

- high root density
- extensive fibrous root systems (no bulbs)
- vigorous growth
- tolerant of freely draining soils
- drought and inundation tolerant

## 5. Stormwater Management During Construction

To prevent contamination of stormwater discharge and to decrease the speed of flows produced during construction, steps will be taken to manage stormwater. These measures will involve establishing buffer strips and maintaining a clean site by removing loose rubbish. "[Keeping Our Stormwater Clean - A Builder's Guide](#)" by Melbourne Water provides additional information. The objectives depicted in the diagram below illustrate ways to minimise the effects of stormwater runoff during the construction phase.

### Check Council requirements and plan before you start work on site





# Appendix 2 – WSUD Maintenance Manual

**WSUD manuals are sourced from the City of Port Philip which has developed a detailed manual for the majority of treatment systems.**

## Tips for undertaking maintenance

Things to look for and how to fix them.

<b>Leaf litter / debris in gutters</b>	<b>Pump not working</b>
Regularly clear your gutters. Make sure you cover the tank inlet if you're rinsing down the gutters to avoid debris entering the tank.	Check operating instructions for your pump. Check that pumps are kept clear of surface water (flooding), vegetation, and have adequate ventilation. Pumps should be serviced every few years to prolong the pump life.
<b>Blocked downpipe</b>	<b>Mains backup or pump not working</b>
If you see water spilling from the edge of the gutters check that the downpipe is not blocked, removing any debris.	Have you heard the pump operating? If the mains backup switching device fails many people do not notice for a long time. Consider a manual system if the switching device is problematic and you don't mind operating it manually.
<b>First flush diverter clogging</b>	<b>Overflow</b>
To clean out, unscrew the cap at the base of the diverter and remove the filter. Wash the filter with clean water and the flow restrictor inside the cap.	Check that the overflow is not blocked and that there is a clear path for water to safely spill from the tank through the overflow pipe when full. Check that a clean mesh screen is safely in place to prevent mosquitoes entering the tank.
<b>Debris on the mesh cover over inlets / outlets</b>	<b>Sediment / debris build-up in tank (more than 20mm thick)</b>
The fine stainless steel mesh is similar to fly screen mesh. It should be cleaned regularly to ensure it does not become blocked with leaves and other material.	Over time a small amount of fine sediment will collect in the bottom of your tank and this is harmless and natural. It should not be disturbed until it is approx 20 mm thick which may take many years. To clean your tank out simply empty your tank and wash out with a high-pressure washer or hose.
<b>Dirt and debris around the tank base or side.</b>	<b>Base area</b>
Keep leaf build-up, sticks, pot plants and other items off the lid of your tank. Use a hose to remove dust and dirt from the outside of the rainwater tank and ensure there is no debris on the base, bottom lip and walls of your tank.	Tanks must be fully supported by a flat and level base. Check for any movement, cracks or damage to the slab or pavers. If damage is observed, empty the tank to remove the weight and have the fault corrected to prevent damage to the tank. There is no warranty from suppliers for damage to a rainwater tank if the base has failed.
<b>Smelly water or mosquitos</b>	<b>Monitoring the water level</b>
Rainwater tanks can smell if there is debris in the gutters. Check the gutters and leaf strainers are clean. Mosquitos or wrigglers can make their way into your tank if they are small enough to pass through the inlet strainer. A very small amount of chlorine (approx 4 parts per million) can be put in the tank to kill off mosquitos or the bacteria causing odours. The chlorine will disinfect the water and then evaporate. Chlorine tablets from a pool supplier can be used (but check the recommended dose based on your tank capacity).	A range of devices are available to monitor water level. Some simple float systems can be used effectively.

Acknowledgement: Information from PJT Green Plumbing's 'Maintenance Guide for Your Rainwater Tank' was used to develop this fact sheet.



## Maintenance manual

# Rainwater tanks

Site address: \_\_\_\_\_

Planning permit number: \_\_\_\_\_

## Rainwater tank maintenance

This manual lists the key tasks required to maintain a domestic rainwater tank and the recommended frequency of each task. This manual can be submitted with planning permit applications for developments that include the installation of a domestic rainwater tank. Once endorsed, the property owner is responsible for continuous implementation of rainwater tank maintenance, in accordance with the guidance in this manual.

Rainwater tanks are an exceptional tool for environmental protection. They collect and store roofwater for use inside and outside the home. This simultaneously reduces the demand on our precious potable mains water and limits the amount of stormwater pollutants that enter our sensitive Bay.

Maintenance of rainwater tanks is relatively easy however it is important to do the following key tasks to ensure the quality of water is high:

- stop leaf litter and debris entering the tank.
- prevent bird droppings and dust building up in the gutters.
- prevent mosquitos and other animals entering the tank.

Tank connected to	toilet only <input type="checkbox"/> toilet & irrigation <input type="checkbox"/> toilet & laundry & irrigation <input type="checkbox"/> toilet & laundry & hot water & irrigation <input type="checkbox"/>
Rainwater tank location	
Planning drawing number showing rainwater tank location	
Rainwater tank construction date	
Date of final building inspection	
Tank volume (litres)	
Area or percentage of the roof that is connected to the tank via gutters and downpipes	

For more information please visit [www.portphillip.vic.gov.au](http://www.portphillip.vic.gov.au) or contact the Sustainability team via:

Phone: 03 9209 6777

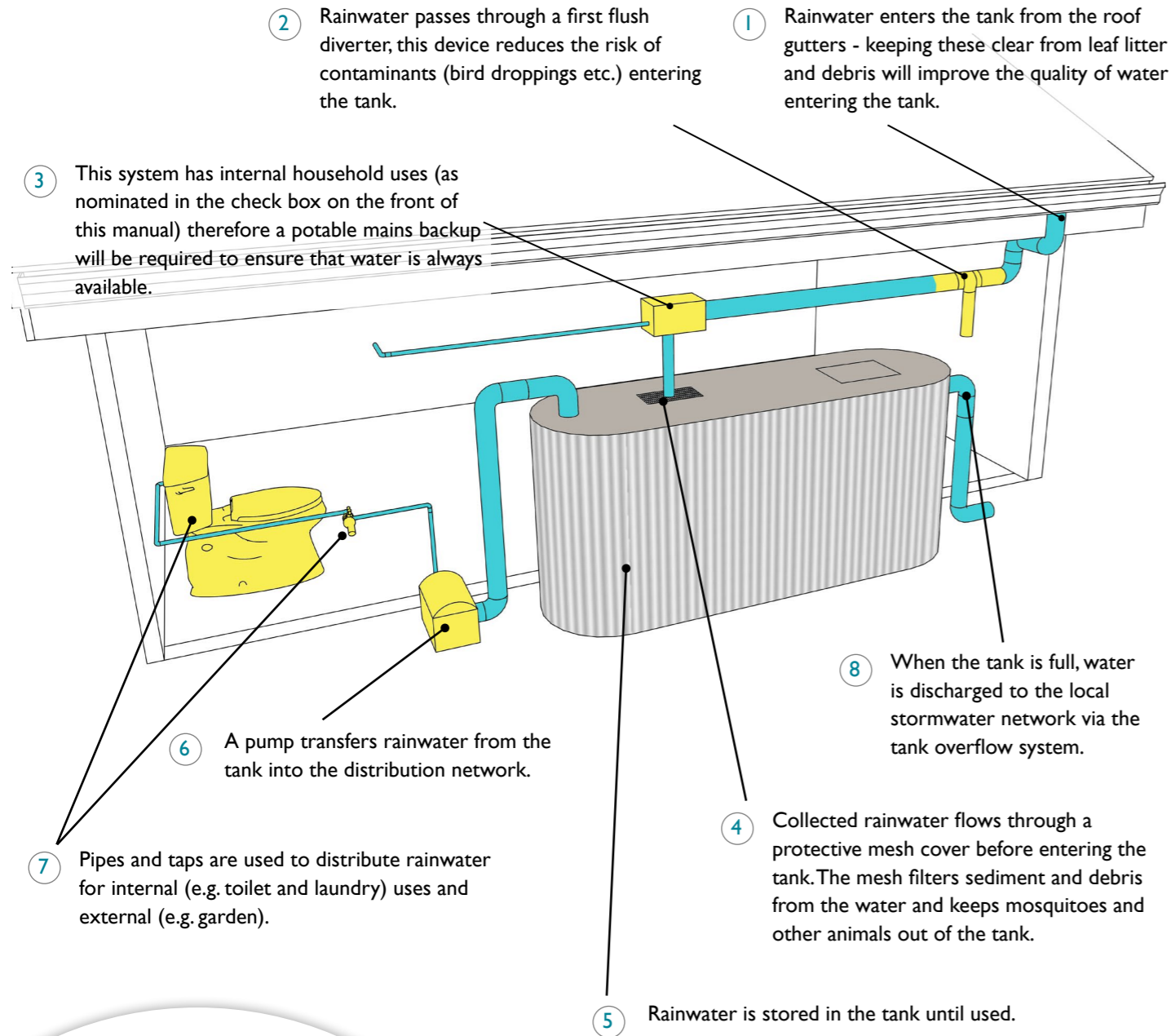
email: [sustainabledesign@portphillip.vic.gov.au](mailto:sustainabledesign@portphillip.vic.gov.au)



# Maintenance Overview

## Rainwater Tank Maintenance

The following diagram identifies the key items which are important for rainwater tanks and their maintenance.



## Maintenance Checklist

The property owner is responsible for checking the maintenance items in this checklist at the recommended frequency at the bottom of the table. The maintenance log at the bottom of the page should be filled in once each maintenance check is complete. Upkeep of this maintenance log should continue throughout the life of the rainwater tank.

Item	Rainwater tank element	Inspection item	Y/N	Likely maintenance task
1	Roof gutters and downpipes	Is there leaf litter or debris in the gutters?		Remove by hand and dispose responsibly.
2	First flush diverter	Is there anything blocking the first flush diverter (leaves etc)?		Remove by hand and dispose responsibly.
3	Potable mains back up device	Is the potable mains back up switch operating correctly?		Repair or replace device. Consider a manual switching device.
4	Mesh cover	Has the mesh cover deteriorated or have any holes in it?		Replace mesh cover.
5	Tank volume	Is there large amounts of sediment or debris sitting in the bottom of the tank, reducing the volume available in the tank to store water?		Remove sediment and dispose responsibly.
6	Pump	Is the pump working effectively? Have you heard it on a regular basis?		Check the potable mains back up is not permanently on. Repair or replace pump.
7	Pipes and taps	Are pipes and taps leaking?		Repair as needed.
8	Overflow	Is the overflow clear and connected to the stormwater network?		Remove blockages and/or restore connections to stormwater network.
9	Supporting base	Are there any cracks or movement of pavers?		Empty the tank to reduce weight then repair any damage to the base.

Maintenance frequency												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
All tasks	x			x			x			x		

Regular maintenance will improve the water quality and extend the life of your system. A well maintained tank isn't likely to need to be cleaned out for up to ten years (when there is more than 20mm of accumulated sediment).

## Maintenance Log

Maintenance date	Maintenance undertaken



## Tips for undertaking maintenance

Things to look for and how to fix them.

<b>Scour or erosion</b>	<b>Weeds</b>
Erosion and scour reduce the overall area of treatment by directing flows to certain areas only. Erosion or scour can be re-profiled with hand tools, limiting the damage to adjacent vegetation. If fill material is required to create a flat surface, use an appropriate raingarden planting media mix. If erosion / scour keeps happening at the inlet, place some small rocks where erosion occurs.	Weeds can take over the plants which are needed in the raingarden for treatment. Hand pull weeds and dispose of appropriately. Plant bare patches if needed. Weeding should take place before the plants flower to reduce the likelihood of seed dispersal and further regeneration.
<b>Rubbish, leaf litter or sediment</b>	<b>Moss or clay on surface</b>
A lot of rubbish or leaf litter at the inlet or on the surface of the raingarden can affect how well water can enter and filter through the raingarden. This material can be removed easily by hand or with tongs / rakes. Collected litter should be placed into bags or similar for disposal.	Moss or clay on the surface of the raingarden can result in a crust forming which prevents water from filtering and being treated. Use hand tools to scrape off the clay or moss and dispose of appropriately. Check raingarden drains.
<b>Uneven surface</b>	<b>Raingarden outlets not draining</b>
An uneven surface may result in some areas not getting wet during rain events, reducing the area of treatment. Depressions or mounds can be flattened with hand tools, limiting the damage to vegetation.	Blockages of outlet pits and pipes can cause a flooding risk for the property as water is unable to leave the raingarden. Blockages are typically caused by sediment, leaf litter and rubbish. Blockages should be removed manually, by hand or with hand tools such as tongs and shovels. Large blockages in pits may require vacuuming or other appropriate machinery.
<b>Elevated surface level / lots of excess sediment on surface</b>	<b>Impermeable liner</b>
If sediment has entered the system and has raised the level of the surface, this reduces the amount of water which can be filtered. Use hand tools to remove/scrape sediment from around the plants. Remove sediment from the raingarden and dispose of appropriately.	An impermeable liner (e.g. geotextile or flexible membrane) is sometimes used to ensure water does not move into the surrounding soils. This may be required if the surrounding soils are very sensitive to any added moisture (e.g. sodic soils, shallow groundwater or close proximity to significant structures such as building foundations).
<b>Unhealthy or dying plants / bare patches</b>	<b>Raingarden holding water on the surface because of blocked planting media</b>
Good plant cover is critical for raingardens so if plants are looking stressed in dry periods, irrigation may be required. Remove (prune) any areas affected by disease or pests. If the plants are dying and have created bare patches, the plants need to be replaced. If the plants keep struggling, replace with a plant type which is growing well in the raingarden.	Generally raingardens should be able to filter water at a rate of ~100mm per hour. If the surface of the raingarden is clogged (by clay or moss etc.) or the underlying filter media is not appropriate then water will not be able to drain through the system to be treated. If the surface is clogged use hand tools to scrape off the clay or moss. If this doesn't fix the drainage issue remove an area of planting media to expose the filter media. Check that water can pass through the filter media by pouring water on its exposed surface. If the water can drain then replace the top planting media and check for blockages elsewhere. If the water does not drain the filter media will need to be replaced.



## Maintenance manual

# Raingardens

Site address: \_\_\_\_\_

Planning permit number: \_\_\_\_\_

## Raingarden maintenance

This manual lists the key tasks required to maintain a domestic raingarden and the recommended frequency of each task. This manual can be submitted with planning permit applications for developments that include the installation of a domestic raingarden. Once endorsed, the property owner is responsible for continuous implementation of raingarden maintenance, in accordance with the guidance in this manual.

A raingarden is a specially designed garden that uses plants and soil to remove the pollutants from stormwater runoff that is generated from roofs, driveways and paths following rainfall events. These natural treatment systems help protect the environment by reducing the amount of stormwater runoff and pollutants that enter the Bay.

Maintenance of raingardens is essential in order to ensure that they:

- effectively treat stormwater,
- continue to look good, and
- don't cause local flooding.

Raingarden location	
Planning drawing number showing raingarden location	
Raingarden construction date	
Date of final building inspection	
Area of raingarden (m <sup>2</sup> )	
Area of catchment (m <sup>2</sup> ) (e.g. roof and/or paving) directed to the raingarden	

For more information please visit [www.portphillip.vic.gov.au](http://www.portphillip.vic.gov.au) or contact the Sustainability team via:

Phone: 03 9209 6777

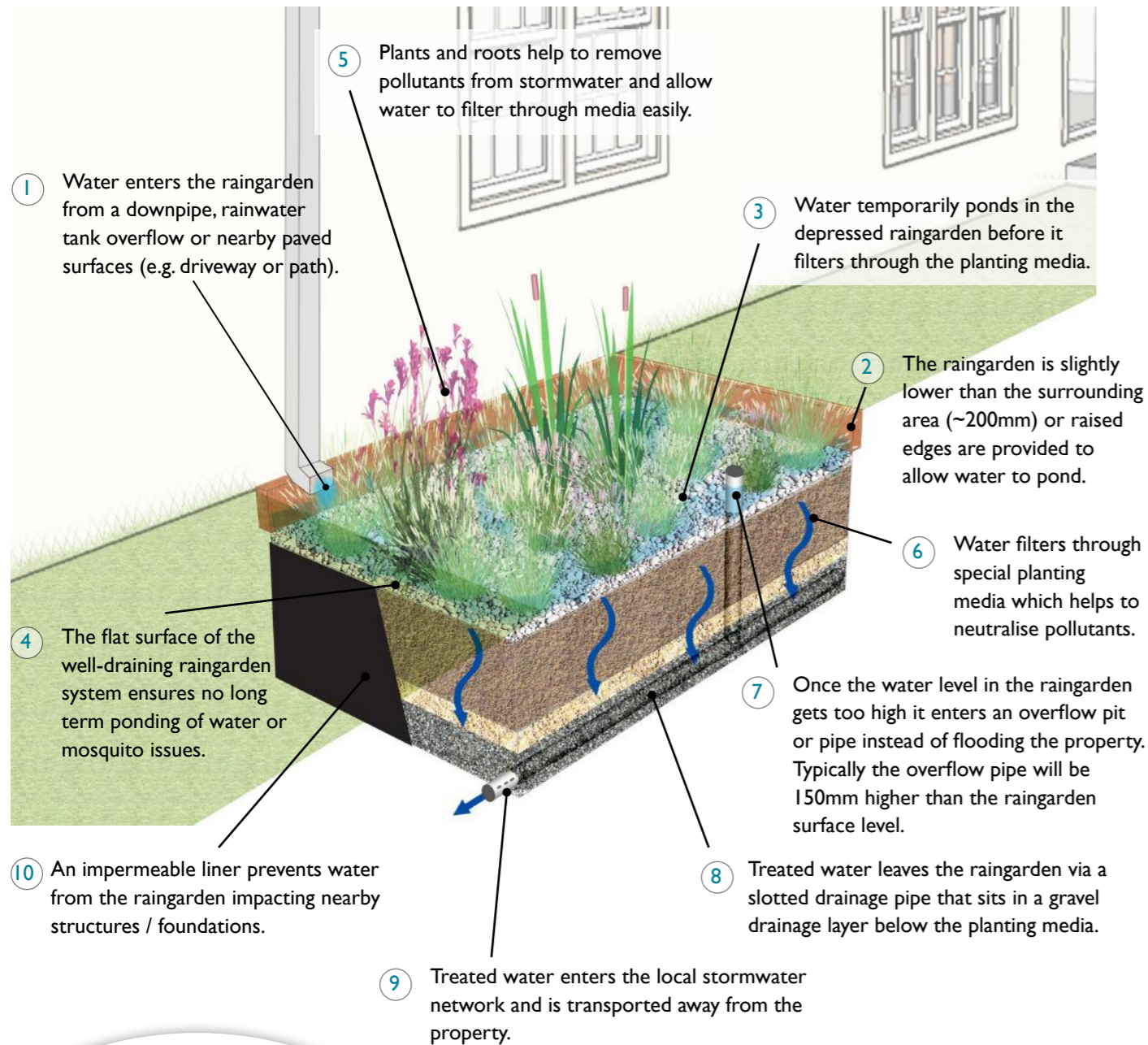
email: [sustainabledesign@portphillip.vic.gov.au](mailto:sustainabledesign@portphillip.vic.gov.au)



# Maintenance Overview

## Raingarden Maintenance

This diagram depicts an in-ground raingarden. Raised bed raingardens are also common (refer to photograph).



**Note:** It is important not to add fertiliser, compost or floatable mulch to a raingarden as the nutrients will pass through the raingarden and pollute the Bay. The plants best suited to raingardens will grow well in the planting media and take nutrients for their growth from the water entering the raingarden.



## Maintenance Checklist

The property owner is responsible for checking the maintenance items in this checklist at the recommended frequency at the bottom of the table. The maintenance log at the bottom of the page should be filled in once each maintenance check is complete. Upkeep of this maintenance log should continue throughout the life of the raingarden.

Item	Raingarden element	Inspection item	Y/N	Likely maintenance task
1	Raingarden inlet	Is there scour or erosion where water enters the raingarden?		Re-profile with hand tools, place gravel or stones at the inlet.
		Is there rubbish, leaf litter or sediment blocking the inlet?		Remove by hand and dispose responsibly.
2	Raingarden surface level	Is the level of the raingarden surface sitting less than 5 cm below the raingarden edges/borders?		Remove sediment from the surface so it is sitting about 10-20 cm below surrounding areas.
3	Raingarden temporary detention	Is there moss or clay on the surface of the raingarden which seem to be slowing the filtration of flows?		Remove the crust from the top of the raingarden and check water will filter through exposed media.
4	Raingarden surface	Are there areas which appear to be higher and are not getting wet during rain events?		Smooth out surface so it is flat with hand tools.
		Are there areas which have been eroded away or scoured?		
5	Plants	Are the plants looking unhealthy or dying?		Prune diseased sections, irrigate and/or replace dead plants. If plants keep dying, replace with a different type which is doing well. Do not use fertilizer to improve plant health as this will pollute the raingarden.
		Are there bare patches forming between plants?		
		Are there weeds present?		Remove weeds by hand and dispose responsibly.
6	Planting media	Is the raingarden holding water for more than a couple of hours after the rain has stopped?		Remove and replace the top 100 mm of planting material (loamy sand).
7	Overflow pit / pipe	Is there anything blocking the top of the overflow pit / pipe preventing water from entering?		Remove blockages and dispose responsibly.
8	Underdrainage	Is there rain draining to the bottom of the raingarden following heavy rain?		Flush the underdrain or uncover it to check for blockages.
9	Stormwater network connection	Is there water ponding in the overflow pit or pipe and not entering the stormwater network?		Remove blockages and dispose responsibly.

### Maintenance frequency

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			x						x		

+ after heavy rainfall

## Maintenance Log

Maintenance date	Maintenance undertaken



# Appendix 3 – Green Star VOC Limits

**VOC Limits for Paints, Adhesives and Sealants**

Product Category	Maximum VOC content (g/L)
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 sealants, waterproofing membranes and sealants, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

**VOC Limit for Carpets**

Test Protocol	Limit (mg/m <sup>2</sup> 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

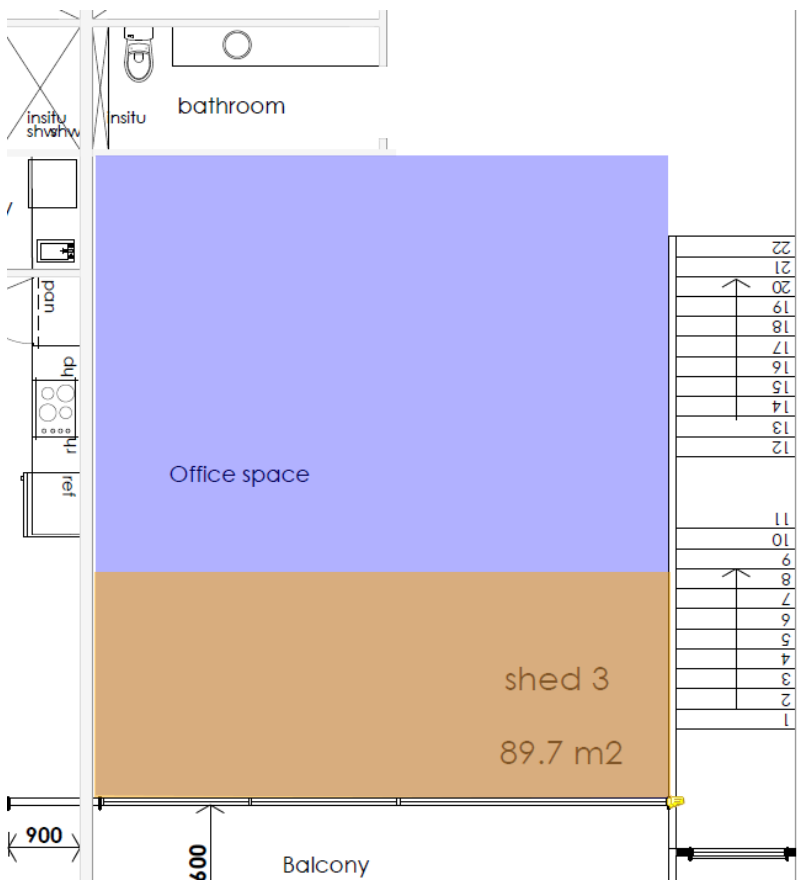


# Appendix 4 – Daylight Hand Calculation

Daylight access in the office spaces was assess using the Green Star Daylight Hand Calculation.

The Green Star Daylight Hand Calculation is a simple method to assess how much of a space has achieved the minimum BESS best practice requirement (2% Daylight Factor (DF)). The calculation is based on one simple formula as follows: Zone of compliance = 2 x Height of window above working plane x Width of the window. Windows must have a minimum of 40% VLT to us this hand calculation method.

Working plane is 700mm for the office and showroom. See below for a mark-up of nominated areas (blue) and compliant areas (orange):







# Appendix 5 – BESS Report

# BESS Report

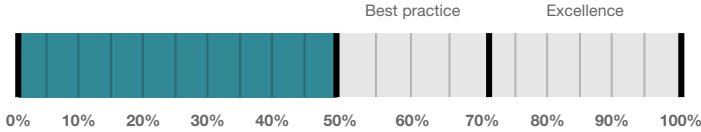
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 309 Bellerine St South Geelong Victoria 3220. 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



# 50%

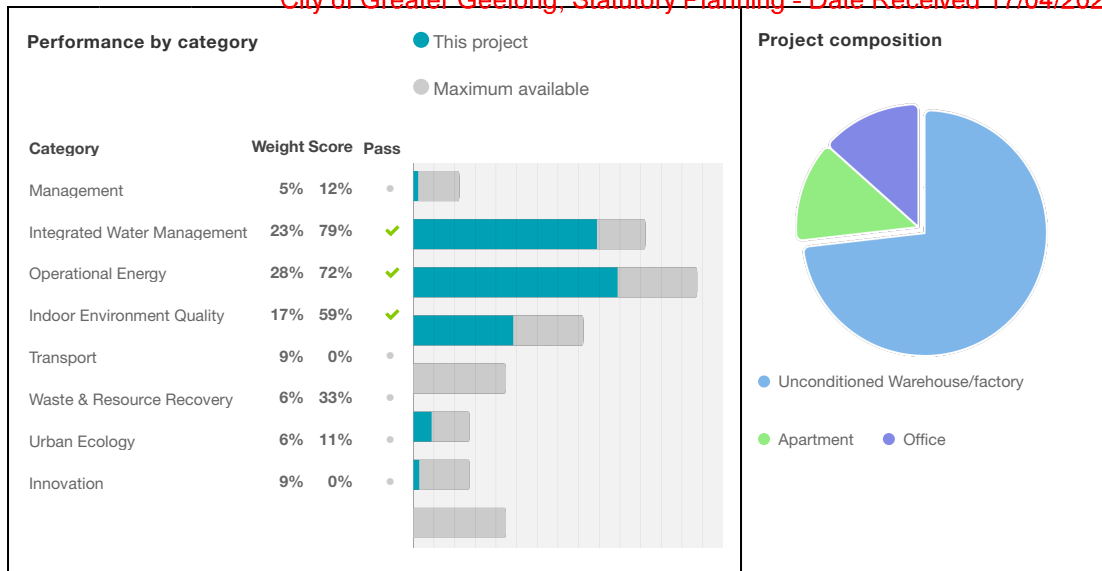
## Project details

<b>Name</b>	309 Bellerine Street, South Geelong
<b>Address</b>	309 Bellerine St South Geelong Victoria 3220
<b>Project ID</b>	B3408152-R2
<b>BESS Version</b>	BESS-10
<b>Date</b>	19 March 2026
<b>Software version</b>	2.3.0-B.647

---

<b>Site type</b>	Mixed use development
<b>Account</b>	admin@msconsultants.com.au
<b>Application no.</b>	
<b>Site area</b>	836 m <sup>2</sup>
<b>Building floor area</b>	669 m <sup>2</sup>





## Buildings

Name	Height	Footprint	% of total footprint
Mixed Use Building	2	490 m <sup>2</sup>	100%

## Dwellings & Non Res Spaces

### Dwellings

Name	Quantity	Area	Building	% of total area
<b>Apartment</b>				
Caretaker Residence	1	89.7 m <sup>2</sup>	Mixed Use Building	13%
<b>Total</b>	<b>1</b>	<b>89 m<sup>2</sup></b>	<b>13%</b>	

### Non-Res Spaces

Name	Quantity	Area	Building	% of total area
<b>Office</b>				
Office	1	89.7 m <sup>2</sup>	Mixed Use Building	13%
<b>Total</b>	<b>1</b>	<b>89 m<sup>2</sup></b>	<b>13%</b>	
<b>Unconditioned Warehouse/factory</b>				
Sheds	1	490 m <sup>2</sup>	Mixed Use Building	73%
<b>Total</b>	<b>1</b>	<b>490 m<sup>2</sup></b>	<b>73%</b>	

## Supporting Evidence

### Shown on Floor Plans

Credit	Requirement	Response	Status
Management 3.2	Annotation: Individual utility meters to be provided to all individual commercial tenancies		-
Integrated Water Management 2.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Operational Energy 4.2	Location and size of solar photovoltaic system		-
Indoor Environment Quality 2.1	Dwellings meeting the requirements for being 'naturally ventilated'		-
Waste & Resource Recovery 2.2	Location of recycling facilities		-
Urban Ecology 2.1	Location and size of vegetated areas		-

### Supporting Documentation

Credit	Requirement	Response	Status
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 3.6	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%

		12%
1.1 Pre-Application Meeting		0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		0%
2.3 Thermal Performance Modelling - Non-Residential		0%
3.1 Metering - Residential		0%
3.2 Metering - Non-Residential		100%
3.3 Metering - Common Areas		0%
4.1 Building Users Guide		0%

**IWM Overall contribution 22.5%**

		<b>79%</b>	<b>✓ Pass</b>
1.1 Potable Water Use		73%	✓ Achieved
2.1 Stormwater Treatment		100%	✓ Achieved
3.1 Water Efficient Landscaping		0%	
4.1 Building Systems Water Use		0%	

**Operational Energy Overall contribution 27.5%**

		<b>Minimum required 50%</b>	<b>72%</b>	<b>✓ Pass</b>
1.1 Thermal Performance Rating - Non-Residential			37%	
1.2 Thermal Performance Rating - Residential			0%	✓ Achieved
2.1 Greenhouse Gas Emissions			42%	
2.2 Peak Demand			100%	
2.6 Electrification			100%	
2.7 Energy consumption			100%	
3.1 Carpark Ventilation			N/A	✦ Scoped Out
N/A				
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			100%	
4.4 Renewable Energy Systems - Other			N/A	✦ Scoped Out
No other (non-solar PV) renewable energy is in use.				

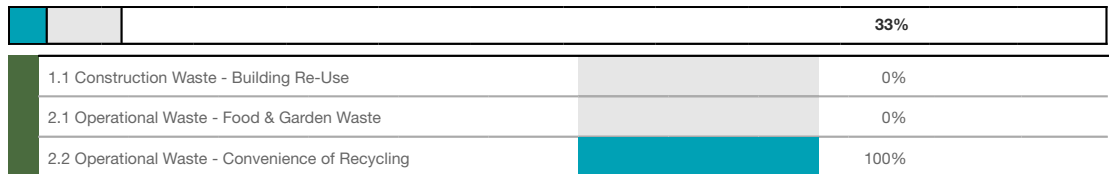
**IEQ Overall contribution 16.5%**

		Minimum required 50%	59%	✓ Pass
1.1	Daylight Access - Living Areas		100%	✓ Achieved
1.2	Daylight Access - Bedrooms		100%	✓ Achieved
1.3	Winter Sunlight		0%	
1.4	Daylight Access - Non-Residential		77%	✓ 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%	

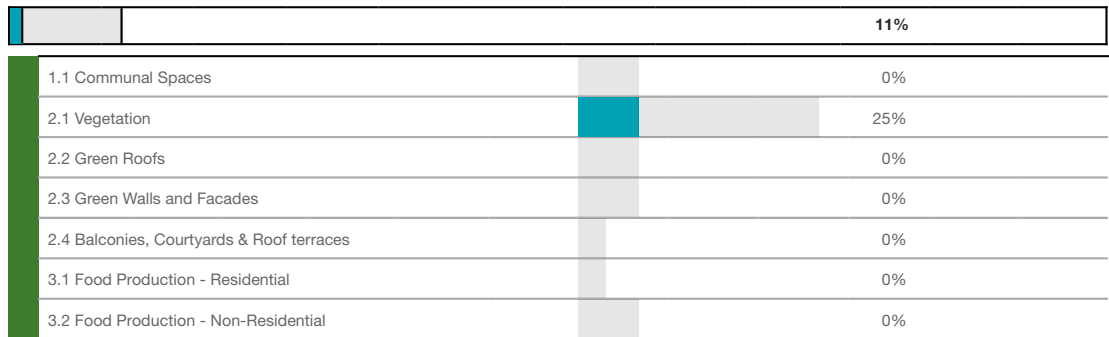
**Transport Overall contribution 9.0%**

		0%
1.1	Bicycle Parking - Residential	0%
1.2	Bicycle Parking - Residential Visitor	N/A ✦ Scoped Out
Not enough dwellings.		
1.3	Bicycle Parking - Convenience Residential	0% ⓧ Disabled
Credit 1.1 must be achieved first.		
1.4	Bicycle Parking - Non-Residential	0%
1.5	Bicycle Parking - Non-Residential Visitor	0%
1.6	End of Trip Facilities - Non-Residential	0% ⓧ Disabled
Credit 1.4 must be complete first.		
2.1	Electric Vehicle Infrastructure	0%
2.2	Car Share Scheme	N/A ✦ Scoped Out
N/A		
2.3	Motorbikes / Mopeds	0%

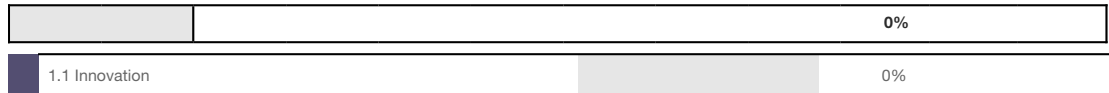
**Waste & Resource Recovery Overall contribution 5.5%**



**Urban Ecology Overall contribution 5.5%**



**Innovation Overall contribution 9.0%**



**Credit breakdown**

**Management Overall contribution 4.5%**

		12%
--	--	-----

**1.1 Pre-Application Meeting** 0%

Score Contribution	This credit contributes 36.4% 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 10.9% 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** 0%

Score Contribution	This credit contributes 10.9% towards the category score.
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2022 Section J4D6?
Question	Criteria Achieved ?
Office	No
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2022 Section J (Energy Efficiency), NABERS or Green Star?
Question	Criteria Achieved ?
Office	No

**3.1 Metering - Residential** 0%

Score Contribution	This credit contributes 5.4% towards the category score.
Criteria	Have utility meters been provided for all individual dwellings?
Question	Criteria Achieved ?
Apartment	No

**3.2 Metering - Non-Residential** 100%

Score Contribution	This credit contributes 12.1% towards the category score.
Criteria	Have utility meters been provided for all individual commercial tenants?
Question	Criteria Achieved ?
Office	Yes
Unconditioned Warehouse/factory	Yes

<b>3.3 Metering - Common Areas</b>		0%
Score Contribution	This credit contributes 12.1% towards the category score.	
Criteria	Have all major common area services been separately submetered?	
Question	Criteria Achieved ?	
Apartment	No	
Office	No	
Unconditioned Warehouse/factory	No	
<b>4.1 Building Users Guide</b>		0%
Score Contribution	This credit contributes 12.1% towards the category score.	
Criteria	Will a building users guide be produced and issued to occupants?	
Question	Criteria Achieved ?	
Project	No	

IWM Overall contribution 22.5%

79% ✔ Pass

Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
<b>Stormwater profile</b>	
Which stormwater modelling software are you using?:	Blue Factor
Blue Factor score achieved?:	100
Flow:	-
Total Suspended Solids:	-
Total Phosphorus:	-
Total Nitrogen:	-
<b>Rainwater tank profile</b>	
What is the total roof area connected to the rainwater tank?:	
Combined Tanks (3 x 4kL)	498 m <sup>2</sup>
	-
Tank Size:	
Combined Tanks (3 x 4kL)	12,000 Litres
	-
Irrigation area connected to tank:	
Combined Tanks (3 x 4kL)	-
	-
Is connected irrigation area a water efficient garden?:	
Combined Tanks (3 x 4kL)	No
	-
Other external water demand connected to tank?:	
Combined Tanks (3 x 4kL)	-
	-
<b>Fixtures, fittings &amp; connections profile</b>	
Building: All	Mixed Use Building
Showerhead:	
Caretaker Residence	4 Star WELS (>= 6.0 but <= 7.5)
Office	Scope out
Sheds	
Bath: All	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers:	
Caretaker Residence	Default or unrated
Office	
Sheds	Scope out
WC: All	>= 4 Star WELS rating

Urinals: All	Scope out
<b>Washing Machine Water Efficiency:</b>	
Caretaker Residence	Occupant to Install
Office Sheds	Scope out
Which non-potable water source is the dwelling/space connected to?: All	Combined Tanks (3 x 4kL)
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
<b>1.1 Potable Water Use</b>	73% <span style="color: green;">✔</span> 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	433 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	331 kL
Output	Proposed (including rainwater and recycled water use)
Project	215 kL
Output	% Reduction in Potable Water Consumption
Project	50 %
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	84 kL
<b>2.1 Stormwater Treatment</b>	100% <span style="color: green;">✔</span> Achieved
Score Contribution	This credit contributes 56.2% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Output	Min Blue Factor Score
Project	100
Output	Blue Factor Score
Project	100
<b>3.1 Water Efficient Landscaping</b>	0%
Score Contribution	This credit contributes 6.2% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	No

4.1 Building Systems Water Use	0%
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	No

Operational Energy Overall contribution 27.5%

Minimum required 50%

72% ✔ Pass**Project profile**Use the BESS Deem to Satisfy (Dts) method for Non-residential Yes  
spaces?:Are you installing any renewable energy system(s) (other than No  
solar photovoltaic)?:

Energy Supply: All-electric

**Solar Photovoltaic system profile**

System Size (lesser of inverter and panel capacity):

3kW unit 1 3.0 kW peak

3kW unit 2 3.0 kW peak

3kW Unit 3 3.0 kW peak

Orientation (which way is the system facing)?:

3kW unit 1 North

3kW unit 2 North

3kW Unit 3 North

Inclination (angle from horizontal):

3kW unit 1 10.0 Angle (degrees)

3kW unit 2 10.0 Angle (degrees)

3kW Unit 3 10.0 Angle (degrees)

Which Building Class does this apply to?:

3kW unit 1 Unconditioned Warehouse/factory

3kW unit 2 Apartment

3kW Unit 3 Office

**Dwellings profile**

Building: Mixed Use Building

Below the floor is: Another Occupancy

Above the ceiling is: Outside

Exposed sides: 3

NatHERS Annual Energy Loads - Heat: 70.0 MJ/sqm

NatHERS Annual Energy Loads - Cool: 20.0 MJ/sqm

NatHERS star rating: 7.0

Type of Heating System: Reverse cycle space

Heating System Efficiency: Current Default / MEPS

Type of Cooling System: Refrigerative space

Cooling System Efficiency: Current Default / MEPS

Type of Hot Water System: Electric Heat Pump Band 1

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

% Contribution from solar hot water system: 0 %

Clothes Line: No drying facilities

Clothes Dryer: No clothes dryer

**Non-residential Deemed-to-Satisfy profile**

Do all exposed floors and ceilings (forming part of the envelope) Yes demonstrate a minimum 10% improvement in required NCC2022 insulation levels (total R-value upwards and downwards)?:

Does all wall and glazing demonstrate meeting the required Yes NCC2022 facade calculator (or better than the total allowance)?:

Are heating and cooling systems within one Star of the most Yes 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?:

Are water heating systems within one star of the best available, Yes or 85% or better than the most efficient equivalent capacity unit?:

**1.1 Thermal Performance Rating - Non-Residential**  37%

Score Contribution This credit contributes 18.1% 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**  0% ✔ Achieved

Score Contribution This credit contributes 6.8% towards the category score.

Criteria What is the average NatHERS rating?

Output Average NATHERS Rating (Weighted)

Apartment 7.0 Stars

**2.1 Greenhouse Gas Emissions**  42%

Score Contribution This credit contributes 12.5% 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 2,083 kg CO2

Output Proposed Building with Proposed Services (Actual Building)

Apartment 1,898 kg CO2

Output % Reduction in GHG Emissions

Apartment 8 %

**2.2 Peak Demand**  100%

Score Contribution This credit contributes 2.3% 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 15.2% towards the category score.	
Criteria	Is the development all-electric?	
Question	Criteria Achieved?	
Project	Yes	
<b>2.7 Energy consumption</b>		100%
Score Contribution	This credit contributes 20.3% 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	18,679 MJ	
Output	Proposed Building with Proposed Services (Actual Building)	
Apartment	8,761 MJ	
Output	% Reduction in total energy	
Apartment	53 %	
<b>3.1 Carpark Ventilation</b>		N/A  Scoped Out
		N/A
This credit was scoped out	N/A	
<b>3.2 Hot Water - Non-Residential</b>		100%
Score Contribution	This credit contributes 5.1% towards the category score.	
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?	
<b>3.4 Clothes Drying</b>		0%
Score Contribution	This credit contributes 2.3% 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	444 kWh	
Output	Proposed	
Apartment	444 kWh	
Output	Improvement	
Apartment	0 %	
<b>3.6 Internal Lighting - Apartments</b>		100%
Score Contribution	This credit contributes 2.3% 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	
<b>3.7 Internal Lighting - Non-Residential</b>		100%

Score Contribution	This credit contributes 10.1% 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 ?	
Office	Yes	
Unconditioned Warehouse/factory	Yes	
<b>4.1 Combined Heat and Power (cogeneration / trigeneration)</b>		N/A ✦ Scoped Out
No cogeneration or trigeneration system in use.		
This credit was scoped out	No cogeneration or trigeneration system in use.	
<b>4.2 Renewable Energy Systems - Solar</b>		100%
Score Contribution	This credit contributes 5.1% 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	
Office	3,636 kWh	
Unconditioned Warehouse/factory	3,636 kWh	
Output	% of Building's Energy	
Apartment	149 %	
Office	130 %	
Unconditioned Warehouse/factory	148 %	
<b>4.4 Renewable Energy Systems - Other</b>		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%	59% <span style="color: green;">✔</span> 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?:	Use the built in calculation tools
---	------------------------------------

<b>Rooms</b>	
<b>Room Designation:</b>	
Living Room	Living
Bedroom	Bedroom
<b>Quantity: All</b>	1
<b>Auto-Pass:</b>	
Living Room	No
Bedroom	Yes
<b>Room Floor Area:</b>	
Living Room	50.8 m <sup>2</sup>
Bedroom	-
<b>Vertical Angle:</b>	
Living Room	43.0 Angle (degrees)
Bedroom	-
<b>Horizontal Angle:</b>	
Living Room	140 Angle (degrees)
Bedroom	-
<b>Window Area:</b>	
Living Room	13.2 m <sup>2</sup>
Bedroom	-
<b>Window Orientation:</b>	
Living Room	South
Bedroom	-
<b>Glass Type:</b>	
Living Room	Clear Single (VLT 0.81)
Bedroom	-
<b>Daylight Criteria Achieved?: All</b>	Yes

<b>1.1 Daylight Access - Living Areas</b>	<div style="width: 100%; height: 15px; background-color: #00A0C0;"></div>	100% <span style="color: green;">✔</span> Achieved
---	---	--

Score Contribution	This credit contributes 6.2% towards the category score.	
Criteria	What % of living areas achieve the daylight criteria?	
Output	Calculated percentage	
Apartment	100 %	

<b>1.2 Daylight Access - Bedrooms</b>	<div style="width: 100%; height: 15px; background-color: #00A0C0;"></div>	100% <span style="color: green;">✔</span> Achieved
---------------------------------------	---	--

Score Contribution	This credit contributes 6.2% towards the category score.
Criteria	What % of bedrooms achieve the daylight criteria?
Output	Calculated percentage
Apartment	100 %

<b>1.3 Winter Sunlight</b>		0%
----------------------------	---	----

Score Contribution	This credit contributes 2.1% 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

<b>1.4 Daylight Access - Non-Residential</b>		77% <span style="color: green;">✔</span> Achieved
--	---	---

Score Contribution	This credit contributes 27.9% towards the category score.
Criteria	What % of the nominated floor area has at least 2% daylight factor?
Annotation	ONLY showroom are relevant in shed for daylight access
Question	Percentage Achieved?
Office	35 %
Unconditioned Warehouse/factory	85 %

<b>1.5 Daylight Access - Main Living Areas</b>		N/A <span style="color: orange;">✦</span> Scoped Out
--	---	--

Spatial daylight autonomy metric not in use

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

<b>1.6 Daylight Access - Secondary Habitable Rooms</b>		N/A <span style="color: orange;">✦</span> Scoped Out
--	---	--

Spatial daylight autonomy metric not in use

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

<b>2.1 Ventilation - Natural - Apartments</b>		100%
---	---	------

Score Contribution	This credit contributes 6.2% towards the category score.
Criteria	What % of dwellings are effectively naturally ventilated?
Question	Percentage Achieved?
Apartment	100 %

<b>2.3 Ventilation - Non-Residential</b>		50% <span style="color: green;">✔</span> Achieved
--	---	---

Score Contribution	This credit contributes 27.9% towards the category score.
--------------------	---

Criteria	What % of the regular use areas are effectively naturally ventilated?
Question	Percentage Achieved?
Office	100 %
Unconditioned Warehouse/factory	100 %

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?
Office	-
Unconditioned Warehouse/factory	-

Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?
Question	Value
Office	-
Unconditioned Warehouse/factory	-

**3.4 Thermal comfort - Shading - Non-Residential** 0%

Score Contribution This credit contributes 13% towards the category score.

Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?
Question	Percentage Achieved?
Office	-
Unconditioned Warehouse/factory	-

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

Score Contribution This credit contributes 4.7% towards the category score.

Criteria	What percentage of regular use areas in tenancies have ceiling fans?
Question	Percentage Achieved?
Office	-
Unconditioned Warehouse/factory	-

**4.1 Air Quality - Non-Residential** 100%

Score Contribution This credit contributes 4.7% towards the category score.

Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Office	Yes
Unconditioned Warehouse/factory	Yes

Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Office	Yes
Unconditioned Warehouse/factory	Yes

Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Office	Yes
Unconditioned Warehouse/factory	Yes

Transport Overall contribution 9.0%

	0%
--	----

<b>1.1 Bicycle Parking - Residential</b>	0%
--	----

Score Contribution	This credit contributes 10.7% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there for residents?
Question	Bicycle Spaces Provided ?
Apartment	-

<b>1.2 Bicycle Parking - Residential Visitor</b>	N/A  Scoped Out
Not enough dwellings.	

This credit was scoped out      Not enough dwellings.

<b>1.3 Bicycle Parking - Convenience Residential</b>	0%  Disabled
Credit 1.1 must be achieved first.	

This credit is disabled      Credit 1.1 must be achieved first.

<b>1.4 Bicycle Parking - Non-Residential</b>	0%
--	----

Score Contribution	This credit contributes 23% 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 ?
Office	No
Unconditioned Warehouse/factory	No
Question	Bicycle Spaces Provided ?
Office	-
Unconditioned Warehouse/factory	-

<b>1.5 Bicycle Parking - Non-Residential Visitor</b>	0%
--	----

Score Contribution	This credit contributes 11% 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 ?
Office	No
Unconditioned Warehouse/factory	No
Question	Bicycle Spaces Provided ?
Office	-
Unconditioned Warehouse/factory	-

<b>1.6 End of Trip Facilities - Non-Residential</b>	0%  Disabled
Credit 1.4 must be complete first.	

This credit is disabled      Credit 1.4 must be complete first.

<b>2.1 Electric Vehicle Infrastructure</b>	0%
--	----

Score Contribution	This credit contributes 23% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	No

<b>2.2 Car Share Scheme</b>		N/A	✚ Scoped Out
			N/A

This credit was scoped out	N/A
----------------------------	-----

<b>2.3 Motorbikes / Mopeds</b>		0%
--------------------------------	--	----

Score Contribution	This credit contributes 11% 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	-

**Waste & Resource Recovery Overall contribution 5.5%**

		<b>33%</b>
--	--	------------

<b>1.1 Construction Waste - Building Re-Use</b>		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

<b>2.1 Operational Waste - Food &amp; Garden Waste</b>		0%
--	--	----

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	No

<b>2.2 Operational Waste - Convenience of Recycling</b>		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%

		11%
--	--	-----

<b>1.1 Communal Spaces</b>		0%
----------------------------	--	----

Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m <sup>2</sup> for each of the first 50 occupants * Additional 0.5m <sup>2</sup> for each occupant between 51 and 250 * Additional 0.25m <sup>2</sup> for each occupant above 251?	
Question	Common space provided	
Apartment	-	
Office	-	
Unconditioned Warehouse/factory	-	
Output	Minimum Common Space Required	
Apartment	2 m <sup>2</sup>	
Office	7 m <sup>2</sup>	
Unconditioned Warehouse/factory	9 m <sup>2</sup>	

<b>2.1 Vegetation</b>		25%
-----------------------	--	-----

Score Contribution	This credit contributes 44% 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	5 %	

<b>2.2 Green Roofs</b>		0%
------------------------	--	----

Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	

<b>2.3 Green Walls and Facades</b>		0%
------------------------------------	--	----

Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	No	

<b>2.4 Balconies, Courtyards &amp; Roof terraces</b>		0%
--	--	----

Score Contribution	This credit contributes 5% 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	

<b>3.1 Food Production - Residential</b>		0%
--	--	----

Score Contribution	This credit contributes 5% 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	1 m <sup>2</sup>

<b>3.2 Food Production - Non-Residential</b>	<b>0%</b>
--	-----------

Score Contribution	This credit contributes 11.2% towards the category score.
Criteria	What area of space per occupant is dedicated to food production?
Question	Food Production Area
Office	-
Unconditioned Warehouse/factory	-
Output	Min Food Production Area
Office	2 m <sup>2</sup>
Unconditioned Warehouse/factory	3 m <sup>2</sup>

**Innovation Overall contribution 9.0%**

	<b>0%</b>
--	-----------

<b>1.1 Innovation</b>	<b>0%</b>
-----------------------	-----------

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

**Disclaimer**

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

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