

# ADVERTISED PLAN



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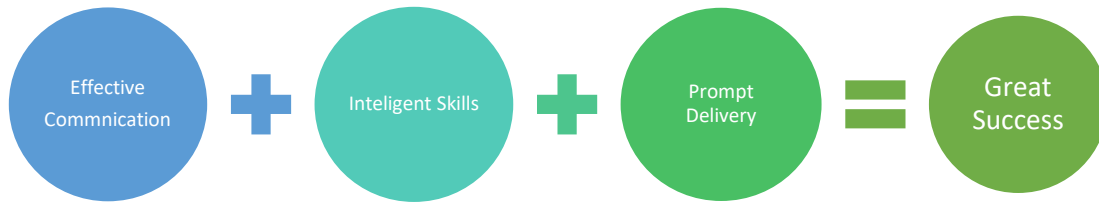
## **LINCOLN PEARCE** **SUSTAINABILITY MANAGEMENT PLAN**

8 Witt Street Mitcham - Arcare

1060-RPT-SMP-G

Date 17 October 2025

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**Management Plans**

**Management Plans**

**Implementation**

**Management**

**Daylight Modelling**

**NatHERS Rating**

**Section J J1V3 Modelling**

**Asset Performance**

**Audio Visual**

**CFD Modelling**

**Fire Protection**

**Transportation**

**Construction**

**WSUD**

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# LINCOLN PEARCE

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### Revision Schedule

Issue	Date	Description	Author
A	07/03/2025	Issued for Town Planning	Komal Teni
B	14/03/2025	Issued for Town Planning	Komal Teni
C	19/03/2025	Updated the report with the Façade calculator	Komal Teni
D	21/05/2025	Updated with the latest architectural drawings	Komal Teni
E	28/05/2025	Updated the STORM Assessment	Komal Teni
F	05/06/2025	Issued For Town Planning	Komal Teni
G	17/10/2025	Issued For Town Planning	Komal Teni

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# 1 Project Introduction

## 1.1 Site Location, and Master Plan

Arcare Aged Care is developing a modern aged care facility at 8 Witt Street, Mitcham. This facility will accommodate up to 130 residents, including 7 DDA rooms. The building will span three floors, from the ground level to the second floor. The basement will provide 64 car parking spaces, offering ample parking for residents, visitors, and staff.

To enhance residents' quality of life, the facility will feature various amenities, including a gym, hair salon, theatre, laundry, kitchen, refuse area, and furniture store/maintenance area. Staff will benefit from a training room, team centre, flexible workspaces, and ample storage.

Each Aged Care room is thoughtfully designed to ensure access to outdoor spaces, with either courtyards or balconies providing direct outdoor access and pleasant views. This design promotes a connection with nature and enhances the living experience for residents.

Common areas on every floor will promote social interaction and community engagement. These areas include:

- Comfortable sitting and lounge spaces
- Dining areas where residents can enjoy meals together
- Activity areas for various events
- Community gathering spots designed for social events and interactions

To ensure residents receive the best possible care, essential health-related facilities will be available on every floor. These include:

- A clinic for medical consultations and treatments
- A medical room equipped for medical care and emergencies



For specific construction details for the Project, refer to the Project Documentation inclusive of Architectural and Structural Engineering documents and associated Specifications.

## **1.2 Scope and Intention of Documents**

The following Sustainability Management Plan is a summary of the major requirements to assist with the Town Planning application. This written document shall be read in conjunction with all other Town Planning application documents to be fully converse with the requirements.

The information provided under Section J is solely to illustrate that compliance can be achieved. The outcomes presented are indicative and may be adjusted throughout the design development process following the issuance of the town planning permit. Final results will also depend on construction factors and compliance with Section J requirements.

## **1.3 Stakeholder Confirmation**

This document is Lincoln Pearce's recommendations given the information provided and requires the Client, Architect and other Stakeholders to review and confirm their methodology and understanding is in agreeance to implement. If no comments are raised, then Lincoln Pearce shall continue these methodologies.

## **1.4 Authorities and Standards**

All Building Services requirements shall be in accordance with:

- a) The requirements of the Statutory Authorities having Jurisdiction over the Project.
- b) Regulations, Codes, Standards and Documents having Jurisdiction over the Project.
- c) The requirements of the Building Regulations covering the Project

## **1.5 Project Documentation**

The design team members shall make themselves aware of the contents of all project documents and project Requirements. Project Documentation includes:

- a) Building Service Documentation for Mechanical, Electrical, Hydraulic, Fire and Vertical Transportation Services inclusive of Drawings, Specifications and Reports.
- b) Sustainability Documentation inclusive of Reports, alternate solutions, and advice
- c) Architectural Documentation inclusive of Drawings and Specifications.
- d) Structural Documentation.
- e) Civil Documentation
- f) Project Fire Engineering and Acoustic Documentation inclusive of Reports, Briefs and Correspondence
- g) Reports and all other related Project Documentation forming part of the Project's Contractual Documentation.

## **1.6 Disclaimer**

The documents outline the Project requirements inclusive of the finishes and the performance of the systems documented. Whilst every care has been taken in preparation of the information, no liability is assumed for the material contained herein. No warranty is provided or implied as to the accuracy of the whole or any part relative to the documentation.

## 1.7 Design Team Members

The following is a list of the design team members.

Definition	Description
<b>Project Location</b>	8 Witt Street, Mitcham
<b>Client / Principal</b>	<b>Knowles Group</b> <a href="http://www.knowlesgroup.com.au">www.knowlesgroup.com.au</a>
<b>Building Services Engineer</b>	<b>Lincoln Pearce</b> <a href="http://www.lincolnpearce.com.au">www.lincolnpearce.com.au</a>
<b>Sustainability Engineer</b>	<b>Lincoln Pearce</b> <a href="http://www.lincolnpearce.com.au">www.lincolnpearce.com.au</a>
<b>Architect</b>	<b>Via Architects</b> <a href="http://www.viaarchitects.com.au">www.viaarchitects.com.au</a>

## 2 Executive Summary

Lincoln Pearce has been engaged to provide a Sustainability Management Plan for the Aged Care facility, at 8 Witt Street, Mitcham VIC 3132 by J & G Knowles and Associates.

The Sustainability Management plan outlines specific commitments to ESD across various criteria such as building management, water and energy efficiency, stormwater management, Indoor Environment Quality (IEQ), transport, waste management, urban ecology, materials usage, and innovation. Each criterion reflects a different aspect of sustainability that contributes to the overall assessment.

Criteria	Aim of the criteria	Design Response
 <p><b>Management</b></p>	<p>This category promotes sustainable practices throughout the stages of a project's design, construction, and operation.</p>	<ul style="list-style-type: none"> <li>• Building User Guide available to all occupants.</li> </ul>
 <p><b>Water</b></p>	<p>This category aims to promote and reward efforts to reduce water usage by using water-efficient fixtures, building systems, and water reuse.</p>	<ul style="list-style-type: none"> <li>• High efficiency fixtures and fittings.</li> <li>• 20,000L Rainwater tank provided for water re-use to laundry and site irrigation and washdown.</li> <li>• Water efficient landscaping.</li> </ul>
 <p><b>Energy</b></p>	<p>This category aims to reward projects designed and constructed to reduce overall operational energy consumption below that of a comparable standard-practice building.</p>	<ul style="list-style-type: none"> <li>• The project will exceed the BCA requirement for heating and cooling loads by 10%.</li> <li>• 15kW rooftop PV system.</li> <li>• Efficient heating, cooling and ventilation systems.</li> <li>• Efficient Hot Water systems.</li> <li>• Efficient LED lighting systems and controls.</li> <li>• Carbon Monoxide monitoring to control the operation and speed of ventilation fans in the carpark shall be provided</li> </ul>
 <p><b>Stormwater</b></p>	<p>This category aims to minimize peak stormwater outflows from the site and reduce pollutants entering the public sewer infrastructure.</p>	<ul style="list-style-type: none"> <li>• 20,000L Rainwater tank provided for water re-use.</li> <li>• Rainwater runoff to be diverted to Atlan Vortceptor before diverting to LPOD.</li> <li>• MUSIC Modelling prepared by Lanigan Civil</li> </ul>



### Indoor Environment Quality

This category aims to promote and reward efforts that improve the comfort and well-being of occupants.

- Direct access to natural daylight for all habitable rooms has been provided.
- Use of low VOC paints, adhesives, and sealants.
- Use of E1-rated engineered wood products.



### Transport

This category aims to reward projects that help reduce occupants' dependency on private cars, thereby decreasing overall greenhouse gas emissions.

- Good access to public transport and amenities.
- Two Bicycle parking is provided for the employees of the building.



### Waste

To ensure waste avoidance, reuse, and recycling throughout the design and operation process.

- Provision of shared recycling and general waste bins.
- Provision of waste management policies



### Urban Ecology

This category aims to address the consumption of resources within a building construction context by encouraging the selection of lower-impact materials

- Measures to mitigate the heat island effect
- Provision of large landscape areas

### 3 Introduction

Lincoln Pearce has been commissioned to undertake a Sustainability Management Plan for the proposed Arcare Aged Care development located at 8 Witt Street, Mitcham. This has been prepared to address the Whitehorse City Council's sustainability requirements Planning Policy Clause 15.01-2L Environmentally Sustainable Development.

Within Clause 15.01-2L, the City of Whitehorse has identified the following key categories to be addressed:

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



The site underwent assessment using the BESS tool, which was developed by an association of councils led by Merri-bek City Council. This tool evaluates the energy and water efficiency, thermal comfort, and overall environmental sustainability performance of new buildings or alterations. It was designed to showcase how new developments can fulfill sustainability requirements as part of a planning permit application for the participating council.

In the BESS tool, each target area typically receives a score between 1% and 100%. The energy, water, stormwater, and IEQ areas require a minimum score of 50%. An overall score of 50% indicates 'Best Practice,' while a score above 70% indicates 'Excellence.' The BESS assessment result can be found in **Appendix F**.

The Model for Urban Stormwater Improvement Conceptualisation (MUSIC) tool which addresses stormwater quality considerations has been used for the development to ensure that stormwater management best practice requirements have been achieved. **The result of the MUSIC assessment prepared by Lanigan Civil is included in Appendix A.**



## 4 Management

In Management, BESS includes actions related to early consideration of ESD, such as a pre-application meeting with Council and early thermal performance modelling. BESS also includes actions related to ongoing monitoring, including metering and sub-metering strategies. And finally, BESS includes an action that a Building Users' Guide be prepared to assist future building users to understand and operate their new building in the most efficient way.



### Criteria

### Design Response

#### Building Users Guide

A Building User's Guide (BUG) will be developed and made available to all owners and occupants. Generally, the guide should include the following information:

- A description of operational and maintenance requirements of the heating and cooling systems and hot water systems for efficient and safe use of these systems.
- A description of operational and maintenance requirements of building initiatives to reduce energy and water use.
- A description of operational and maintenance requirements of water sensitive urban design features.
- A description of operational and maintenance requirements of waste management strategy; and
- Transport facilities including public transport information.

## 5 Water Efficiency and Stormwater management

In the Water category, BESS focuses on enhancing water efficiency through various measures such as improving fixtures, collecting rainwater, implementing water-efficient landscaping, and optimizing building systems' water use.

Cities and buildings should focus on water efficiency and conservation, as not all uses require drinking-water standards.

Selecting for high WELS-rated fixtures and low-water-use landscaping can significantly reduce both indoor and outdoor water consumption. The Water and Stormwater Management section aims to minimize potable water usage and stormwater runoff while limiting pollution.



Criteria	Design Response
<b>Water Efficient Fittings</b>	<p>The development will include efficient fittings and fixtures to reduce the volume of mains water used in the development. The following WELS star ratings will be specified.</p> <ul style="list-style-type: none"> <li>• Toilets – 4 Star.</li> <li>• Taps (bathroom and kitchen) – 6 Star.</li> <li>• Washing machine – 6 Star;</li> <li>• Showerhead – 4 Star with aeration device (6.0-7.5L/min); and</li> <li>• Dishwasher – 5 Star.</li> </ul>
<b>Rainwater Collection &amp; Use – Rainwater Tank</b>	<p>Rainwater runoff from the part of the roof of 1,150m<sup>2</sup> will be collected and stored in rainwater tanks with a total effective capacity of 20,000L for the development. Rainwater collected will be used for laundry and irrigation in the development.</p>
<b>Stormwater treatment – Atlan Vortceptor</b>	<p>The rest of the runoff from the development of 4869m<sup>2</sup> will be diverted to an Atlan Vortceptor. This will treat the stormwater runoff from the site by filtering coarse and fine pollutants before releasing the outflows to the legal point of discharge on site.</p> <p>These treatment measures along with rainwater retention will significantly reduce stormwater pollution from the site. Please refer to <b>Appendix A</b> for the MUSIC assessment <b>prepared by Lanigan Civil</b>.</p>
<b>Stormwater Proprietary Product Maintenance</b>	<p>A maintenance contract with the manufacturer or suitably qualified company will be required to be implemented to ensure that the proprietary products installed for stormwater treatment are regularly maintained.</p>
<b>Water Efficient Appliances</b>	<p>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.</p>
<b>Water Efficient Landscaping</b>	<p>Native or drought-tolerant plants will be implemented for the landscaped areas on site. Use of water or irrigation will not be required after an initial period when plants are getting established. If irrigation is required, it will be connected to rainwater tanks.</p>

## 6 Energy Efficiency

In the energy category, BESS awards points for passive design, energy efficient services / appliances and energy fuel choices that deliver greenhouse and energy savings above a benchmark building. The benchmark building is based on minimum standards in the National Construction Code (NCC) of Australia including the whole-of-home reference case, the Minimum Energy Performance Standards (MEPS), market availability and other standards.



### Criteria

### Design Response

#### Thermal Performance

Prior to the building construction stage of the project, a section J (NCC 2022) DTS assessment will occur with the following commitments:

- 10% improvement on floor and ceiling insulation level requirement from NCC 2022;
- Wall and glazing performance to be in line with DTS requirements- Preliminary Façade calculator attached under **Appendix E**.
- 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 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 most efficient equivalent capacity unit available if no star rating is available.

Alternatively, prior to the building construction stage of the project, energy modelling will occur with the aim of exceeding requirement of NCC 2022, using an NCC JV3 modelling process. This will be achieved through the use of high-performance building fabric and glazing, low energy lighting and building services. The reference building model will include the minimum improvement committed above for floor and ceiling. This method will allow for flexibility in for glazing performance. Results in BESS using JV3 approach would yield a slightly lower score under BESS Energy 1.1 however our BESS assessment has been prepared to ensure that energy section and overall compliance is maintained.

The information above is provided solely to illustrate that compliance can be achieved. The outcomes presented are indicative and may be adjusted throughout the design development process following the issuance of the town planning permit. Final results will also depend on construction factors and compliance with Section J requirements.

#### Heating and cooling Systems

To reduce the energy consumption heating and cooling will be provided by energy efficient air conditioners (chosen within one star of the best available product in the range at the time of purchase or COP/EER 85% or

better than most efficient equivalent capacity unit available if no star rating is available).

**Hot Water System**

Gas water heating systems within one star of the best available or 85% or better than most efficient equivalent capacity unit.

**Lighting Sensors**

Common areas will be controlled using occupancy sensor and/or daylight sensors. Ventilation in these areas will be controlled using timers and other sensors.

**Car Park Ventilation**

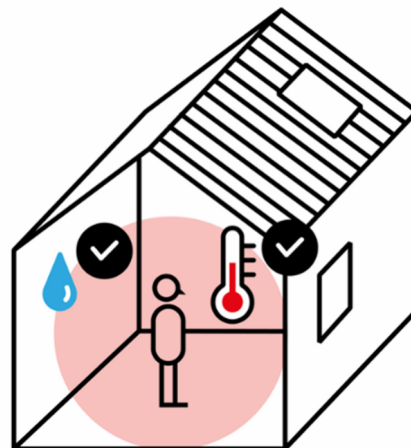
Car park ventilation will be designed to best practice energy efficiency with the exhaust fans installed with CO sensors which will only operate when required.

**Solar PV System**

A 15kW solar photovoltaic for renewable energy generation will be installed on the roof of the development. This will off-set a portion of greenhouse gas emissions and energy use for the project (lighting, pumps etc.).

## 7 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, wellbeing 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 device.



Criteria	Design Response
<b>Volatile Organic Compounds</b>	All paints, adhesives and 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 <b>Appendix C</b> for VOC limits.
<b>Formaldehyde Minimisation</b>	All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better. Alternatively, products will be specified with no Formaldehyde. Products such as ecological panel – 100% post-consumer recycled wood (or similar) will be considered for use within the development. Please refer to <b>Appendix C</b> for formaldehyde limits.
<b>Daylight Levels</b>	<p>Daylight inputs through windows/openings for the Aged Care facility will be enhanced with the use of light internal colours, allowing better internal reflection of daylight. All the spaces in Aged Care facility will have large glazing to allow for good daylight penetration. The Aged Care rooms and common areas will achieve good daylight amenities (beyond compliance with the SDAPP guidelines).</p> <p>Please refer to <b>Appendix D</b> for daylight Hand Calculation showing compliance with best practice requirements.</p>
<b>Mechanical Ventilation – Improved Outside Air Rates</b>	<p>All regularly occupied spaces will be provided with O/A fans which will commit to provide 50% increase on O/A provision from AS1668.</p> <p>Alternatively, O/A will be provided in the regularly occupied spaces to ensure that CO2 concentration in the rooms remains below 700ppm.</p> <p>Wherever possible, the design should also allow for cross flow ventilation as it will reduce the need for mechanical ventilation.</p>
<b>Acoustic Insulation</b>	Each unit will be designed to meet the NCC requirement for acoustic insulation to minimise noise levels and noise transfer within and between buildings.

## 8 Transport

The transport sector is one of the largest contributors to greenhouse gas emissions.

The 'Transport' criteria aim to reward projects that facilitate a reduction of the dependency of building users on private car use as an important means of reducing overall greenhouse gas emissions.

If reliance on individual motor vehicle transportation is to be reduced, it is necessary to maximise alternative transport options. Rather than limiting access to private fossil fuel vehicles, the 'Transport' criteria aim to encourage and reward initiatives that reduce the need for their use. This may include initiatives that encourage and make possible the use of mass transport options, cycling and/or walking, and the selection of sites that are close to many amenities.



Criteria	Design Response
<b>Bicycle Parking</b>	Employees will be able to securely park their bicycles in the dedicated bicycle storage areas provided on the ground floor car park. This will be protected from weather and theft. A total of 2 bicycle racks are provided for employees.

## 9 Construction and 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 on-going 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.



Criteria	Design Response
<b>Construction Waste Management</b>	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.
<b>Construction Environmental Management</b>	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 ensure that appropriate staging of earthworks (e.g. avoid bare earthworks in high-risk areas of the site during dominant rainfall period).
<b>Operational Waste</b>	The development will be provided with a central waste storage room in the basement. The storage area will be sufficiently sized to accommodate the general and recycling waste. Recycling facilities will be as conveniently accessible as the general waste facilities.

## 10 Urban Ecology

In highly urbanised environments, such as metropolitan Melbourne, it is important to recognise the importance of maintaining and increasing the health of our urban ecosystems to improve living conditions not only for the fauna but also ourselves. We can improve our urban ecosystem through the incorporation of vegetation through landscaping for both new and existing developments.



Criteria	Design Response
<b>Landscaping</b>	Large, landscaped areas will be provided around the site. It will provide the occupants with a pleasant surrounding environment. The design will incorporate a mix of native species to help maintain local biodiversity.
<b>Heat Island Effect</b>	To mitigate the heat island effect, this development has enhanced vegetation by planting more trees and creating green spaces, which provide shade and cool the surrounding air. Additionally, the development includes open spaces that support better airflow in and around the building.
<b>Insulant ODP</b>	All thermal insulation used in the development will not contain any ozone-depleting substances and will not use any in its manufacturing.

# 11 Building Materials

The production and use of building materials can have serious impacts on the environment. Energy is used to extract, produce and transport building materials; natural resources are exploited to be used in building materials; the industrial production of the materials causes pollution, and if poorly selected and used, the materials end up as waste.

A building's life cycle impact is largely influenced by material selection, including embodied energy of the material, longevity/durability, source, ability to be reused / recycled and the toxicity of material components.

Standard and certification schemes for sustainable materials, such as EcoSpecifier's Green Tag program and Good Environmental Choice Australia (GECA), provide an independent assessment and are the best starting point for material selection for sustainability.



Criteria	Design Response
<b>Timber</b>	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.
<b>Flooring</b>	<p>The use of timber flooring will be preferred for all living areas and bedrooms. Wherever possible, flooring will be selected from products/materials certified under any of the following:</p> <ul style="list-style-type: none"> <li>• Carpet Institute of Australia Limited, Environmental Certification Scheme (ECS).</li> <li>• Global GreenTag - <a href="https://www.globalgreentag.com/">https://www.globalgreentag.com/</a>; and/or</li> <li>• Good Environmental Choice (GECA).</li> </ul> <p>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.</p>
<b>Joinery</b>	<p>Wherever possible, joinery will be manufactured from materials/products certified under any of the following:</p> <ul style="list-style-type: none"> <li>• Global GreenTag - <a href="https://www.globalgreentag.com/">https://www.globalgreentag.com/</a>; and/or</li> <li>• Good Environmental Choice (GECA).</li> </ul>
<b>Steel</b>	Wherever possible, steel for the development will be sourced from a Responsible Steel Maker. Reinforcing steel for the project will be manufactured using energy reducing processes commonly used by large manufacturers such as Bluescope or OneSteel.



## 12 Implementation and Monitoring

The proposed development will meet the best practice requirement of the City of Whitehorse through the different initiatives described in this report such as thermally efficient building envelopes, efficient air conditioning and hot water system, and sustainable materials. Appropriate implementation and monitoring of the initiatives outlined within this report 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



## 13 Appendix A WSUD Assessment

New development must comply with the best practice performance targets for suspended solids, total phosphorous 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 Model for Urban Stormwater Improvement Conceptualisation (MUSIC) tool which addresses stormwater quality considerations has been used for the development to ensure that stormwater management best practice requirements have been achieved.



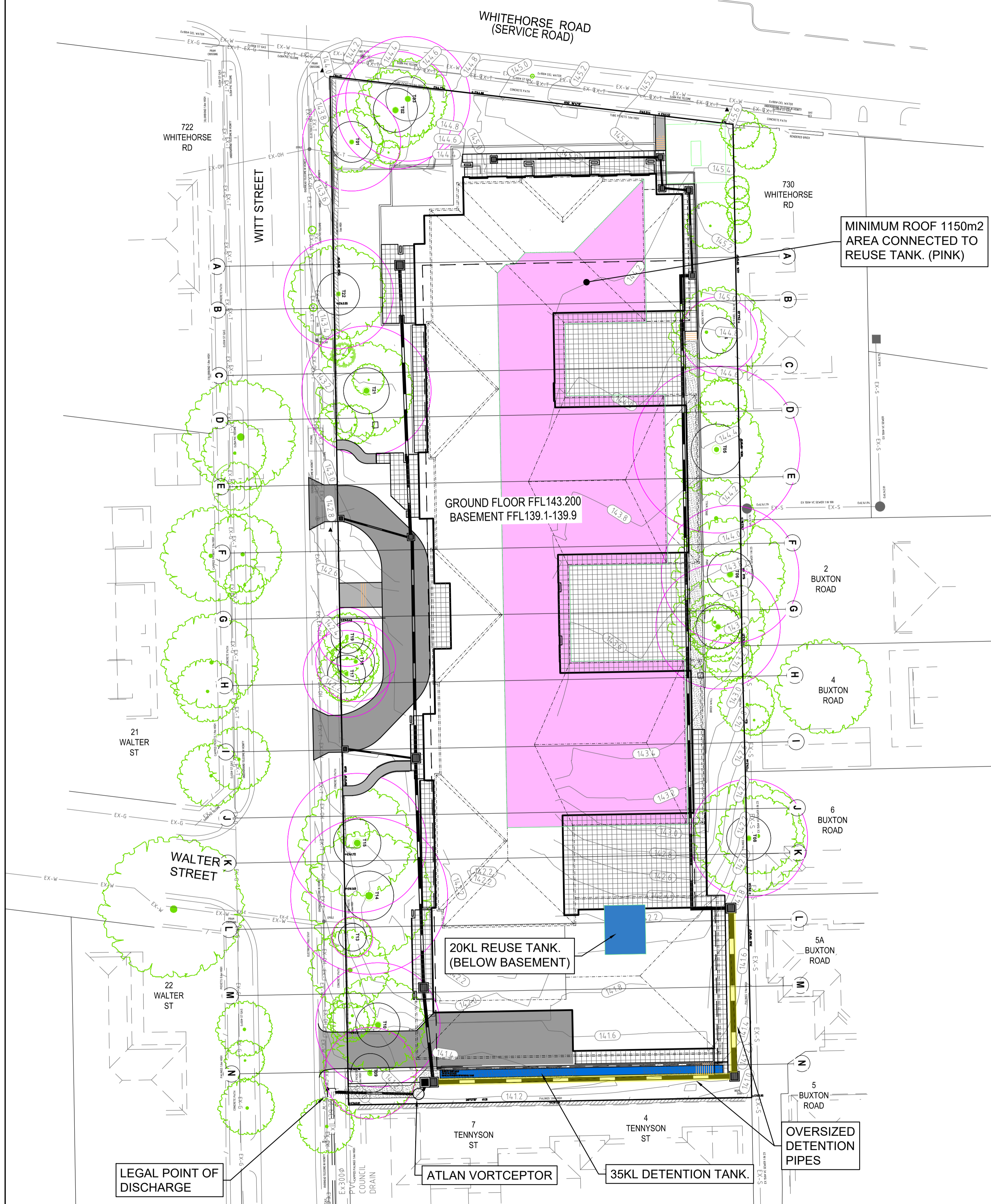
## **13.1 Stormwater Results**

The below initiatives have been proposed and prepared by Lanigan Civil:

# STORMWATER MANAGEMENT PLAN

## PROPOSED AGED CARE FACILITY

8 WITT STREET, MITCHAM, VIC



**STORMWATER MANAGEMENT SUMMARY**

**FLOODING:**  
COUNCIL LIABLE TO FLOODING ADVICE (REG 153/154) - NO. NO APPLICABLE LSI0 / SBO.

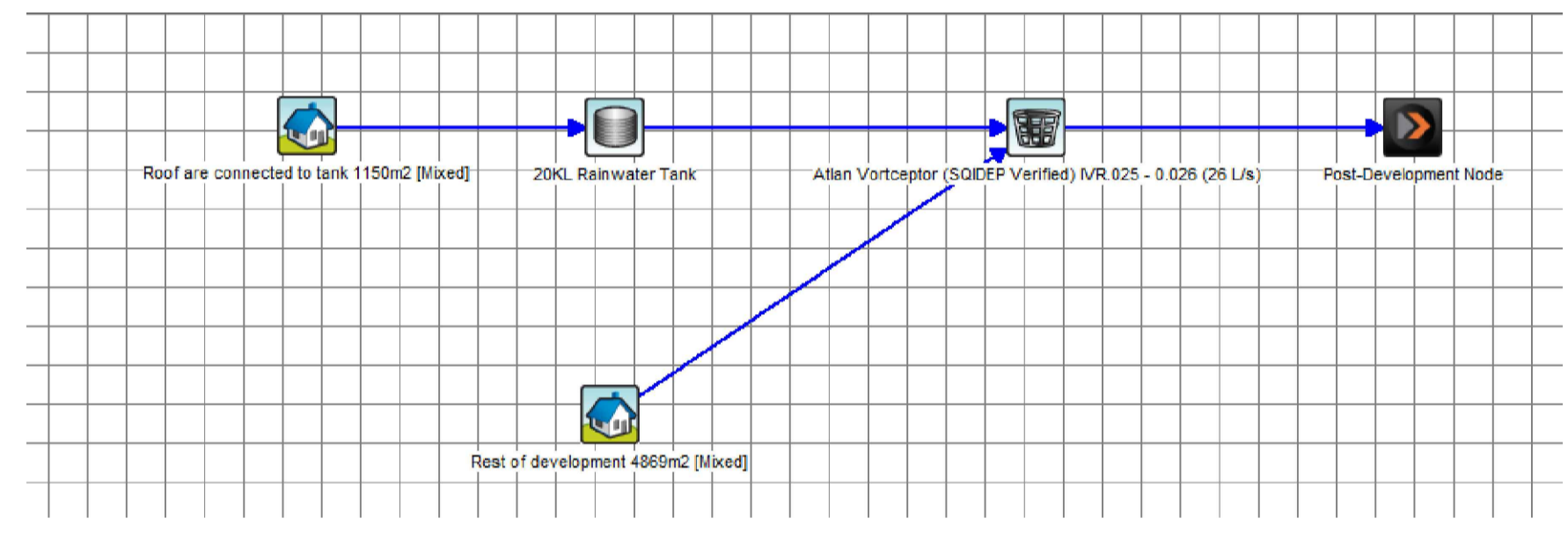
**STORMWATER ON-SITE DETENTION:**  
20% (5 year) POST DEVELOPMENT (C0.85) RESTRICTED TO 20% (5year) PRE DEVELOPMENT (C0.35)  
PSD = 47l/s  
DETENTION REQUIRED = 47m3  
(COMBINATION TANK AND OVERSIZE PIPES)  
- 35m x 450dia PIPE, 20m x 600dia PIPE + PITS = 12m3  
- DETENTION TANK = 35m3

**WATER QUALITY (WSUD):**  
20KL REUSE TANK CONNECTED TO 1150m2 ROOF (WEST FACING DPS)  
PLUMBED FOR IRRIGATION  
ATLAN VORTCEPTOR GPT

**MELBOURNE WATER:**  
NOT IN MELBOURNE WATER DRAINAGE SCHEME

**LEGEND**

DRAINAGE PIPES	STORMWATER DRAINAGE (20%AEP)	
	EXISTING DRAINAGE	
OVERLAND FLOW	INDICATED BY FLOW ARROWS ON PLAN	
LEVELS	EXISTING CONTOURS	
	EXISTING SPOT LEVELS	



**MUSIC TREATMENT TRAIN**

Treatment Train Effectiveness - Post-Development Node

	Sources	Residual Load	% Reduction
Flow (ML/yr)	4.4	3.69	16.1
Total Suspended Solids (kg/yr)	920	87.5	90.5
Total Phosphorus (kg/yr)	1.8	0.256	85.8
Total Nitrogen (kg/yr)	12.7	5.64	55.5
Gross Pollutants (kg/yr)	154	2.31	98.5

Include Pre-Development

**MUSIC RESULTS**

THE CONCEPTUAL STORMWATER DRAINAGE SYSTEM ON THIS SITE HAS BEEN DESIGNED, WITH THE USE OF "MUSIC" (MODEL FOR URBAN STORMWATER IMPROVEMENT CONCEPTUALISATION), SUCH THAT STORMWATER RUNOFF EXITING THE LAND MEETS THE CURRENT BEST PRACTICE WITH THE USE OF THE FOLLOWING TREATMENT DEVICES:

- 1 x 20,000L UNDERGROUND RAINWATER TANK
- PLUMBED TO IRRIGATION.
- 1 x ATLAN VORTCEPTOR (SQIDEP APPROVED)

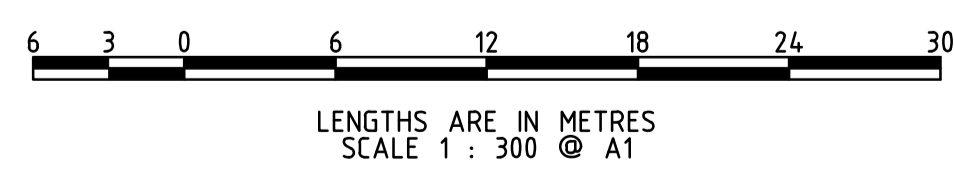
PERFORMANCE OBJECTIVES FOR STORMWATER QUALITY, AS CONTAINED IN THE URBAN STORMWATER BEST PRACTICE ENVIRONMENTAL MANAGEMENT GUIDELINES (VICTORIAN STORMWATER COMMITTEE, 1999) AS FOLLOWS:

- 80% REDUCTION OF THE TYPICAL ANNUAL LOAD OF SUSPENDED SOLIDS (90.5% ACHIEVED)
- 45% REDUCTION OF THE TYPICAL ANNUAL LOAD OF TOTAL PHOSPHORUS (85.8% ACHIEVED)
- 45% REDUCTION OF THE TYPICAL ANNUAL LOAD OF TOTAL NITROGEN (55.5% ACHIEVED)
- 70% REDUCTION OF THE TYPICAL ANNUAL LOAD OF GROSS POLLUTANTS (98.5% ACHIEVED)

FOR TREATMENT OF STORMWATER ON SITE MEETS BEST PRACTICE GUIDELINES AND THEREFORE HAS AN EQUIVALENT "STORM" RATING OF 100%

**DRAINAGE DESIGN PARAMETERS:**  
MINOR FLOWS:  
20% AEP UNDERGROUND PIPED DRAINAGE NETWORK DIRECTED TO THE LP0D SHOWN ON PLAN.

**MAJOR FLOWS:**  
1% AEP OVERLAND FLOW PATHS DIRECTED TO ROAD RESERVE.



NO	REVISION	DATE	NO	REVISION	DATE
A	TOWN PLANNING ISSUE	22/05/25			
P1	PRELIMINARY ISSUE	23/03/25			

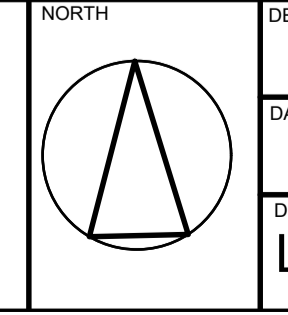
DATUMS USED FOR THIS DESIGN/DRAWING  
VERTICAL: AHD - REFER BENCH MARKS ON PLAN VIDE PM MMB 2096, PARISH OF NUNAWADING, RL145.854m.  
HORIZONTAL: MGA 2020 ZONE 55  
PREPARED BY: SPEEDIE DEVELOPMENT CONSULTANTS  
DATE: 20/09/24  
REF No: 13516F  
MUNICIPALITY: WHITEHORSE CITY COUNCIL



**Lanigan Civil**  
Patama Pty Ltd (ABN: 79 108 035 463)  
Trading as Lanigan Civil  
Consulting Civil Engineers  
Unit 4, 7-9 Hail Street, Braeside VIC 3195  
Tel: 03 9558 4380 Fax: 03 9587 9707  
Email: admin@lanivil.com.au

AGED CARE FACILITY  
8 WITT STREET,  
MITCHAM

STORMWATER  
MANAGEMENT PLAN



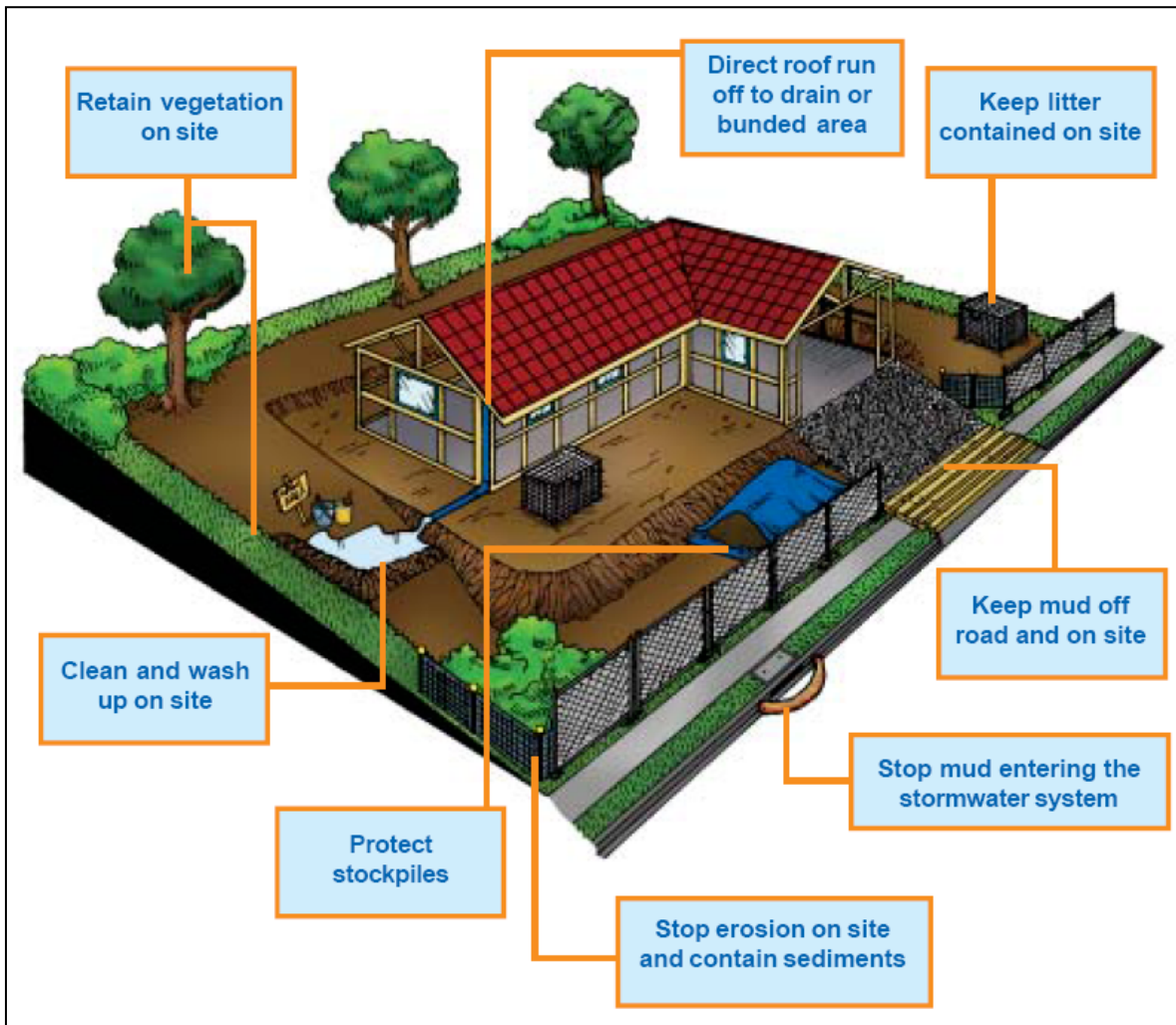
DESIGNED	DRAWN	CHECKED
NJC	NJC	--
DATE	SCALE/S	
AS NOTED	AS NOTED	
DWG NO	ISSUE	
LC3050-SMP1	A	

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CONTRACTOR MUST DIAL 1100 TO CONFIRM LOCATION OF EXISTING SERVICES AND COMPLY WITH ANY AUTHORITY REQUIREMENTS REGARDING EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANY WORKS.

## 13.2 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>

### Installation

#### Criteria

#### Design Response

##### Rainwater Tank(s)

The rainwater tank(s) will be installed above/under ground. Its manufacturer or material has not been nominated. It will be installed with a mesh insect cover over the inlet pipe to ensure the tank does not become 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 (Laundry and irrigation) will be required to be installed as per the chosen manufacturer specifications.

### Inspection Requirements

#### Criteria

#### Design Response

##### Rainwater Tank(s)

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

#### Criteria

#### Design Response

##### Rainwater Tank(s)

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**

**Criteria**

**Design Response**

**Rainwater Tank(s)**

All rainwater tanks should be washed or flushed out prior to use. All inlets and outlets should be correctly sealed to prevent insects entering. Connection to all laundry and irrigation 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
<b>Inspect Rainwater tanks</b>	Every 6 months	<ul style="list-style-type: none"><li>• Check for any damage/compression</li><li>• Mosquitos' infestation</li></ul>
	Every 2 years	<ul style="list-style-type: none"><li>• Sludge Build up – if sludge build up occurs a vacuum tank needs to be called out to site.</li></ul>
<b>Inspect roofs &amp; gutters</b>	Every 6 months	<ul style="list-style-type: none"><li>• Clean out of leaves / debris.</li><li>• Remove any overhanging branches onsite.</li></ul>

## 15 Appendix C Low-Toxicity Materials

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 <sup>2</sup> per hour
ASTM D5116 - 4-PC (4-Phenylcyclohexene)	0.05mg/m <sup>2</sup> per hour
ISO 16000 / EN 13419 - TVOC at three days	0.5 mg/m <sup>2</sup> per hour
ISO 10580 / ISO/TC 219 (Document N238) - TVOC at 24 hours	0.5mg/m <sup>2</sup> 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 <sup>2</sup> hr*
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m <sup>2</sup> 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 <sup>2</sup> hr (at 3 days)
ASTM D6007	≤0.12mg/m <sup>3</sup> **
ASTM E1333	≤0.12mg/m <sup>3</sup> ***
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m <sup>3</sup>
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m <sup>2</sup> hr

\*mg/m<sup>2</sup>hr may also be represented as mg/m<sup>2</sup>/hr.

## 16 Appendix D 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 proposed new development consists of a gym, theatre, staff training, team centre, Aged Care rooms, lounge, dining, café, and community gathering spaces. The areas such as common corridors, stairs, service rooms, and toilets will not be occupied regularly. The nominated areas for the Hand Calculation are only comprised of the regularly occupied space in the Aged Care facility.

The desktop/table level has been estimated to be 700mm.

See below for the markup of the compliant zone (yellow) within each nominated area (orange).

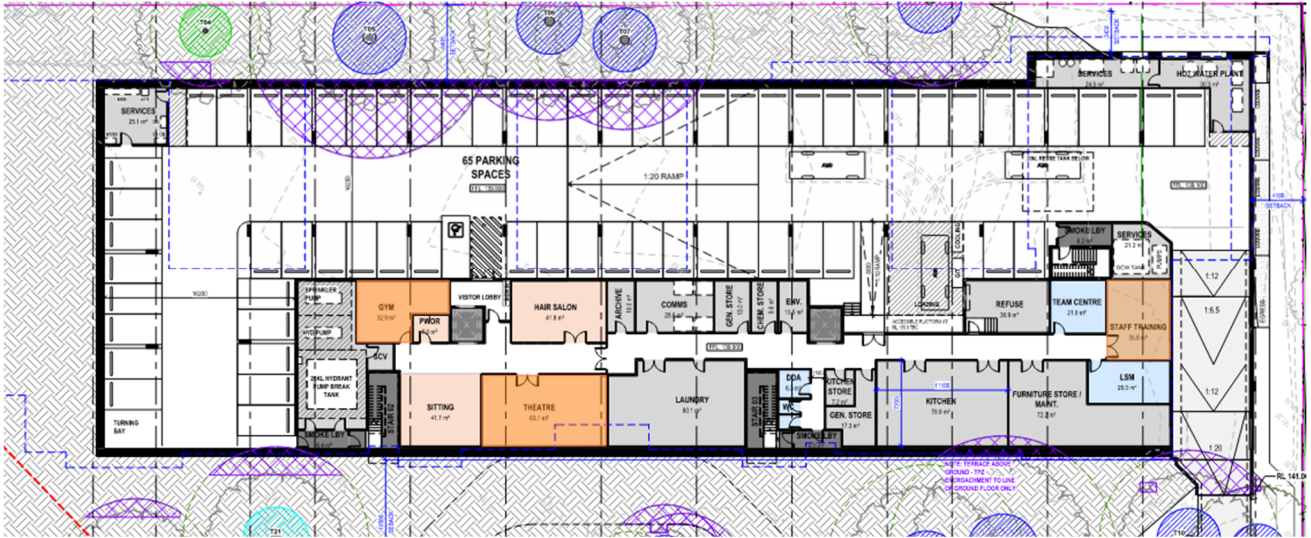


Figure 1: Compliance zone on Basement

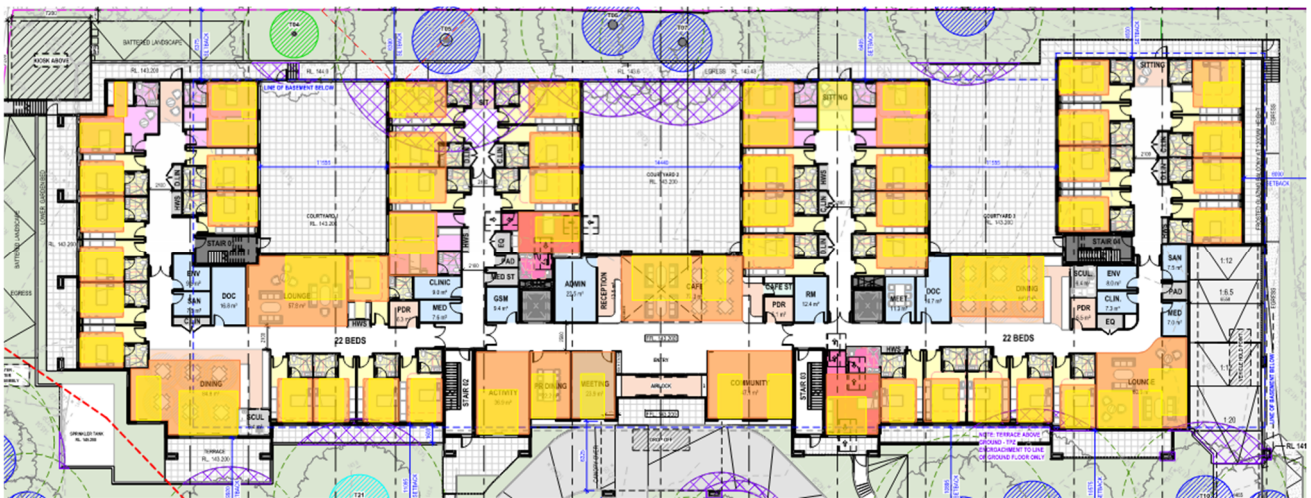


Figure 2: Compliance zone on Ground floor

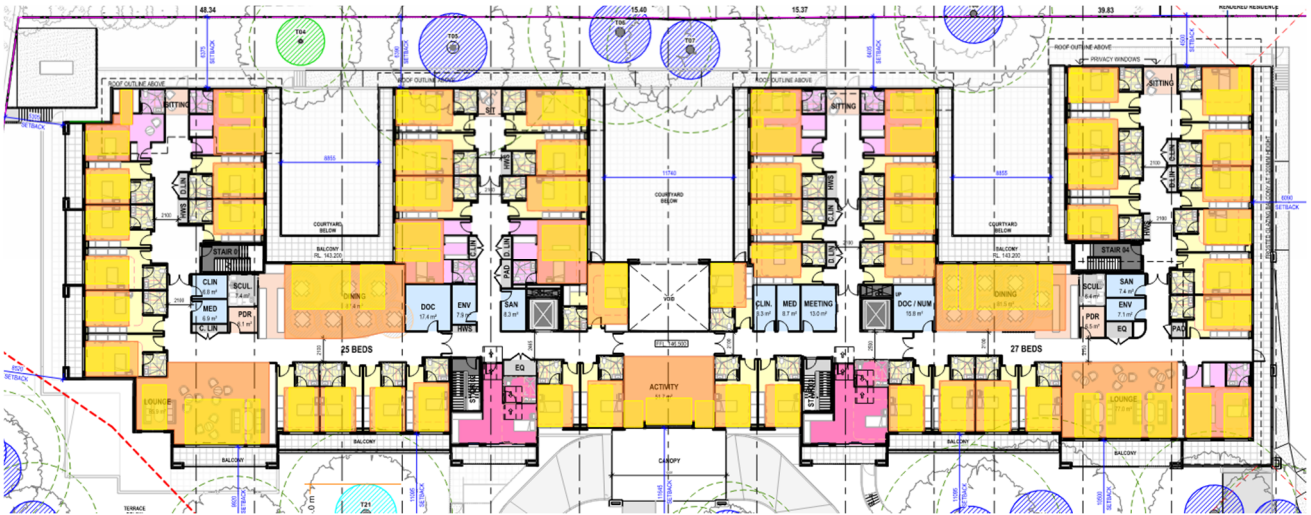


Figure 3: Compliance zone on Level 01



Figure 4: Compliance zone on level 02

		Nominated Areas (m <sup>2</sup> )	Compliant Areas (m <sup>2</sup> )	Compliant Areas (%)	
Basement	Gym	32.9	0		
	Theatre	62.5	0		
	Staff Training	35.8	0		
Ground Floor	Care Rooms	659	415		
	Lounge (2)	118.5	50.2		
	Dinning (2)	108	62		
	Café	65	31		
	Community/PR DIN	68	20		
	Admin	16	9		
	Meeting	21	9		
First Floor	Activity	36	15		
	Care Rooms	786	475		
	Lounge	152	64		
	Dinning	141	68		
Second Floor	Activity	51	25		
	Care Rooms	502	301		
	Dinning	75	30		
	Lounge	76	56		
	Activity/Sitting	53	30		
	<b>TOTAL</b>	<b>3057.9</b>	<b>1659.8</b>		<b>54%</b>

The green star hand calculation for the proposed Aged Care facility shows that the development will achieve and exceed SDAPP best practice requirements with each nominated space achieving only **54%** of floor area at a 2% daylight factor. The minimum requirement of **33%** is required in this credit to pass the IEQ category.

### Project Summary

**Date**  
19/03/2025

**Name**  
Komal Tani

**Company**  
Lincoln Pearce

**Position**  
Engineer - Sustainability

**Building Name / Address**  
Arcare Aged Care  
8 Witt Street Mitcham

**Building State**  
VIC

**Climate Zone**  
Climate Zone 6 - Mild temperate

**Building Classification**  
Class 9c - aged care building

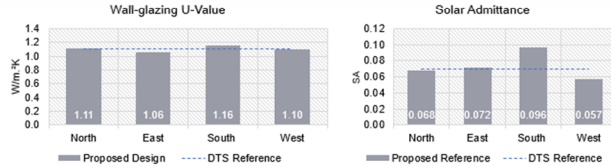
**Storeys Above Ground**  
3

**Tool Version**  
1.2 (June 2020)

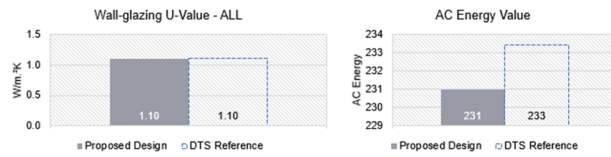
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m <sup>2</sup> .K)	1.11	1.06	1.16	1.10	1.10
Solar Admittance	0.07	0.07	0.10	0.06	
AC Energy Value					231

#### Method 1



#### Method 2



### Project Details

	North	East	South	West
Glazing Area (m <sup>2</sup> )	287.82	358.02	230.04	387.72
Glazing to Façade Ratio	58%	46%	54%	46%
Glazing References	North North Unshaded	East Lvl 1 East Lvl 2 East Lvl 3	South	West Lvl 1 West Lvl 2 West Lvl 3 West 3.1 West 3.2 West 3.3
Glazing System Types	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)
Glass Types	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)
Frame Types	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)	DEFAULTS (GENERIC)
Average Glazing U-Value (W/m <sup>2</sup> .K)	1.72	1.72	1.72	1.72
Average Glazing SHGC	0.26	0.26	0.26	0.26
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m <sup>2</sup> )	284.31	418.5	193.86	399.6
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	Concrete Wall R2	Concrete Wall R2	Concrete Wall R2	Concrete Wall R2
Wall Thickness	150	150	150	150
Average Wall R-value (m <sup>2</sup> .K/W)	2.00	2.00	2.00	2.00
Solar Absorptance	0.6	0.6	0.6	0.6

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# BESS Report

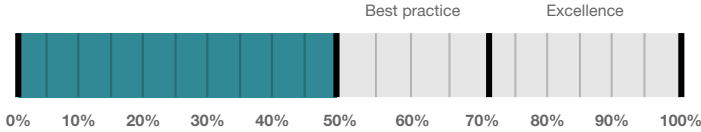
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 8 Witt St Mitcham Victoria 3132. 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 Whitehorse 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

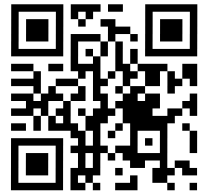


# 51%

## Project details

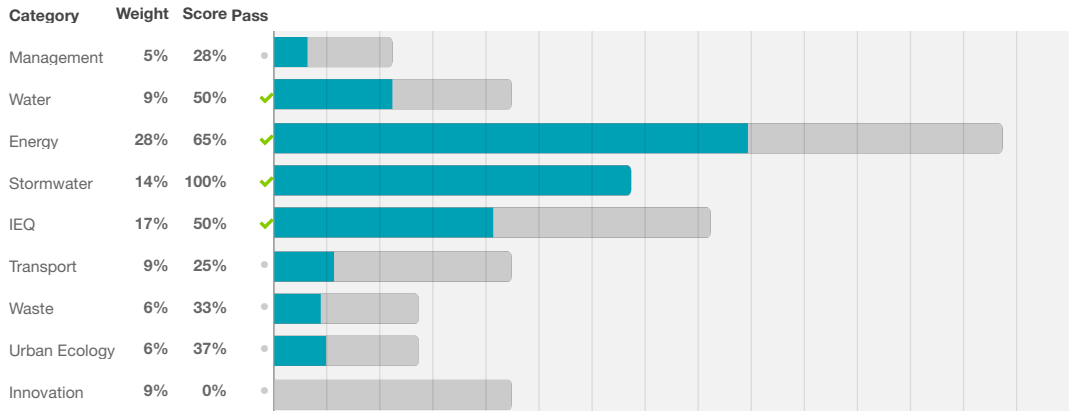
**Name** 8 Witt St, Mitcham VIC 3132, Australia  
**Address** 8 Witt St Mitcham Victoria 3132  
**Project ID** B572FCBB-R1  
**BESS Version** BESS-8

**Site type** Non-residential development  
**Account** komal.teni@lincolnpearce.com.au  
**Application no.**  
**Site area** 6,018 m<sup>2</sup>  
**Building floor area** 7,198 m<sup>2</sup>  
**Date** 21 May 2025  
**Software version** 2.1.0-B.596



## Performance by category

● This project ● Maximum available



## Buildings

Name	Height	Footprint	% of total footprint
Aged Care	3	7,198 m <sup>2</sup>	100%

## Dwellings & Non Res Spaces

### Non-Res Spaces

Name	Quantity	Area	Building	% of total area
<b>Public building</b>				
Aged Care	1	7,198 m <sup>2</sup>	Aged Care	100%
<b>Total</b>	<b>1</b>	<b>7,198 m<sup>2</sup></b>	<b>100%</b>	

## Supporting Evidence

### Shown on Floor Plans


Credit	Requirement	Response	Status
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)		-
Transport 1.4	Location of non-residential bicycle parking spaces		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 1.1	Location and size of communal spaces		-
Urban Ecology 2.1	Location and size of vegetated areas		-

### 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 3.7	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 1.4	A short report detailing assumptions used and results achieved.		-

## Credit summary


### Management Overall contribution 4.5%

	<b>28%</b>
1.1 Pre-Application Meeting	0%
2.3 Thermal Performance Modelling - Non-Residential	50%
3.2 Metering - Non-Residential	N/A <span>✦ Scoped Out</span>
Single Occupancy	
3.3 Metering - Common Areas	0%
4.1 Building Users Guide	100%

### Water Overall contribution 9.0%

	<b>Minimum required 50%</b>	<b>50%</b> <span>✓ Pass</span>
1.1 Potable Water Use Reduction	51%	
3.1 Water Efficient Landscaping	100%	
4.1 Building Systems Water Use Reduction	0%	

### Energy Overall contribution 27.5%

	<b>Minimum required 50%</b>	<b>65%</b> <span>✓ Pass</span>
1.1 Thermal Performance Rating - Non-Residential	37%	
2.1 Greenhouse Gas Emissions	100%	
2.2 Peak Demand	100%	
2.6 Electrification	0% <span>⊘ Disabled</span>	
Credit is available when the energy supply is set to all-electric (no gas or wood).		
2.7 Energy consumption	100%	
3.1 Carpark Ventilation	100%	
3.2 Hot Water	100%	
3.7 Internal Lighting - Non-Residential	100%	
4.1 Combined Heat and Power (cogeneration / trigeneration)	N/A <span>✦ Scoped Out</span>	
No cogeneration or trigeneration system in use.		
4.2 Renewable Energy Systems - Solar	100%	
4.4 Renewable Energy Systems - Other	N/A <span>✦ Scoped Out</span>	
No other (non-solar PV) renewable energy is in use.		

### Stormwater Overall contribution 13.5%

	<b>Minimum required 100%</b>	<b>100%</b> <span>✓ Pass</span>
1.1 Stormwater Treatment	100%	

**IEQ Overall contribution 16.5%**

		<b>Minimum required 50%</b>	<b>50%</b>	<b>✓ Pass</b>
1.4 Daylight Access - Non-Residential			54%	✓ Achieved
2.3 Ventilation - Non-Residential			72%	✓ 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%**

			<b>25%</b>	
1.4 Bicycle Parking - Non-Residential			100%	
1.5 Bicycle Parking - Non-Residential Visitor			0%	
1.6 End of Trip Facilities - Non-Residential			0%	
2.1 Electric Vehicle Infrastructure			0%	
2.2 Car Share Scheme			N/A	✦ Scoped Out
				N/A
2.3 Motorbikes / Mopeds			0%	

**Waste Overall contribution 5.5%**

			<b>33%</b>	
1.1 - Construction Waste - Building Re-Use			0%	
2.1 - Operational Waste - Food & Garden Waste			0%	
2.2 - Operational Waste - Convenience of Recycling			100%	

**Urban Ecology Overall contribution 5.5%**

			<b>37%</b>	
1.1 Communal Spaces			100%	
2.1 Vegetation			50%	
2.2 Green Roofs			0%	
2.3 Green Walls and Facades			0%	
3.2 Food Production - Non-Residential			0%	

**Innovation Overall contribution 9.0%**

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

## Credit breakdown

### Management Overall contribution 4.5%

			<b>28%</b>
--	--	--	------------

	<b>1.1 Pre-Application Meeting</b>		0%
--	------------------------------------	--	----

	Score Contribution	This credit contributes 42.9% 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

	<b>2.3 Thermal Performance Modelling - Non-Residential</b>		50%
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	Score Contribution	This credit contributes 28.6% towards the category score.
	Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2022 Section J4D6?
	Question	Criteria Achieved ?
	Public building	Yes

	Criteria	Has preliminary modelling been undertaken in accordance with either NCC2022 Section J (Energy Efficiency), NABERS or Green Star?
	Question	Criteria Achieved ?
	Public building	No

	<b>3.2 Metering - Non-Residential</b>		N/A  Scoped Out
	Single Occupancy		

	This credit was scoped out	Single Occupancy
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	<b>3.3 Metering - Common Areas</b>		0%
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	Score Contribution	This credit contributes 14.3% towards the category score.
	Criteria	Have all major common area services been separately submetered?
	Question	Criteria Achieved ?
	Public building	No

	<b>4.1 Building Users Guide</b>		100%
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	Score Contribution	This credit contributes 14.3% towards the category score.
	Criteria	Will a building users guide be produced and issued to occupants?
	Question	Criteria Achieved ?
	Project	Yes

**Water Overall contribution 9.0%**

		<b>Minimum required 50%</b>	<b>50%</b>	<b>✔ Pass</b>
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<b>Water Approach</b>	
What approach do you want to use for Water?:	Use the built in calculation tools
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
<b>Fixtures, fittings &amp; connections profile</b>	
Showerhead:	4 Star WELS (>= 6.0 but <= 7.5)
Bath:	Medium Sized Contemporary Bath
Kitchen Taps:	>= 6 Star WELS rating
Bathroom Taps:	>= 6 Star WELS rating
Dishwashers:	>= 5 Star WELS rating
WC:	>= 4 Star WELS rating
Urinals:	Scope out
Washing Machine Water Efficiency:	>= 6 Star WELS rating
Which non-potable water source is the dwelling/space connected to?:	RWT
Non-potable water source connected to Toilets:	No
Non-potable water source connected to Laundry (washing machine):	Yes
Non-potable water source connected to Hot Water System:	No
<b>Rainwater tank profile</b>	
What is the total roof area connected to the rainwater tank?: RWT	1,150 m <sup>2</sup>
Tank Size: RWT	20,000 Litres
Irrigation area connected to tank: RWT	-
Is connected irrigation area a water efficient garden?: RWT	-
Other external water demand connected to tank?: RWT	-
<b>1.1 Potable Water Use Reduction</b>	<b>51%</b>

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	37828 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	26148 kL
Output	Proposed (including rainwater and recycled water use)
Project	25249 kL
Output	% Reduction in Potable Water Consumption
Project	33 %
Output	% of connected demand met by rainwater
Project	33 %
Output	How often does the tank overflow?
Project	Never / Rarely
Output	Opportunity for additional rainwater connection
Project	10720 kL

<b>3.1 Water Efficient Landscaping</b>		100%
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Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes

<b>4.1 Building Systems Water Use Reduction</b>		0%
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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	No

**Energy Overall contribution 27.5%**

		<b>Minimum required 50%</b>	<b>65%</b> <span style="color: green;">✔</span> <b>Pass</b>
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Use the BESS Deem to Satisfy (DtS) method for Non-residential spaces?:	Yes
Do all exposed floors and ceilings (forming part of the envelope) demonstrate meeting the required NCC2022 insulation levels (total R-value upwards and downwards)?:	Yes
Does all wall and glazing demonstrate meeting the required NCC2022 facade calculator (or better than the total allowance)?:	Yes
Are heating and cooling systems within one Star of the most efficient equivalent capacity unit available, or Coefficient of Performance (CoP) & Energy Efficiency Ratios (EER) not less than 85% of the CoP & EER of the most efficient equivalent capacity unit available?:	Yes
Are water heating systems within one star of the best available, or 85% or better than the most efficient equivalent capacity unit?:	Yes
Are you installing a cogeneration or trigeneration system?:	No

**Solar Photovoltaic system profile**

System Size (lesser of inverter and panel capacity):	Solar PV	15.0 kW peak
Orientation (which way is the system facing)?:	Solar PV	North
Inclination (angle from horizontal):	Solar PV	15.0 Angle (degrees)

<b>1.1 Thermal Performance Rating - Non-Residential</b>		<b>37%</b>
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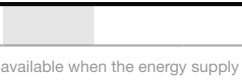
Score Contribution	This credit contributes 34.8% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC2022 Section J)?

<b>2.1 Greenhouse Gas Emissions</b>		<b>100%</b>
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Score Contribution	This credit contributes 8.7% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?

<b>2.2 Peak Demand</b>		<b>100%</b>
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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?






<b>2.6 Electrification</b>		<b>0%</b> <span style="color: grey;">⊘</span> <b>Disabled</b>
Credit is available when the energy supply is set to all-electric (no gas or wood).		

This credit is disabled	Credit is available when the energy supply is set to all-electric (no gas or wood).
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<b>2.7 Energy consumption</b>		<b>100%</b>
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Score Contribution	This credit contributes 17.4% towards the category score.
Criteria	What is the % reduction in annual energy consumption against the benchmark?

<b>3.1 Carpark Ventilation</b>		<b>100%</b>
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Score Contribution	This credit contributes 4.3% towards the category score.	
Criteria	If you have an enclosed carpark, is it: (a) fully naturally ventilated (no mechanical ventilation system) or (b) 40 car spaces or less with Carbon Monoxide monitoring to control the operation and speed of the ventilation fans?	
Question	Criteria Achieved ?	
Project	Yes	
<b>3.2 Hot Water</b>		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?	
<b>3.7 Internal Lighting - Non-Residential</b>		100%
Score Contribution	This credit contributes 8.7% 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 ?	
Public building	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 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	
Public building	18,666 kWh	
Output	% of Building's Energy	
Public building	7 %	
<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.	

**Stormwater Overall contribution 13.5%**

	<b>Minimum required 100%</b>	<b>100%</b>	<b>✓ Pass</b>
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<b>Which stormwater modelling software are you using?:</b>		MUSIC or other modelling software
<b>1.1 Stormwater Treatment</b>		100%
Score Contribution	This credit contributes 100% towards the category score.	
Criteria	Has best practice stormwater management been demonstrated?	
Question	Flow (ML/year)	
Project	16.1 % Reduction	
Question	Total Suspended Solids (kg/year)	
Project	90.5 % Reduction	
Question	Total Phosphorus (kg/year)	
Project	85.8 % Reduction	
Question	Total Nitrogen (kg/year)	
Project	55.5 % Reduction	

**IEQ Overall contribution 16.5%**

		<b>Minimum required 50%</b>	<b>50%</b>	<b>✔ Pass</b>
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<b>1.4 Daylight Access - Non-Residential</b>		54%	✔ Achieved
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Score Contribution	This credit contributes 35.3% towards the category score.
Criteria	What % of the nominated floor area has at least 2% daylight factor?
Question	Percentage Achieved?
Public building	54 %

<b>2.3 Ventilation - Non-Residential</b>		72%	✔ Achieved
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Score Contribution	This credit contributes 35.3% towards the category score.
Criteria	What % of the regular use areas are effectively naturally ventilated?
Question	Percentage Achieved?
Public building	-

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?
Public building	50 %

Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?
Question	Value
Public building	700 ppm

<b>3.4 Thermal comfort - Shading - Non-Residential</b>		0%
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Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?
Question	Percentage Achieved?
Public building	-

<b>3.5 Thermal Comfort - Ceiling Fans - Non-Residential</b>		0%
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Score Contribution	This credit contributes 5.9% towards the category score.
Criteria	What percentage of regular use areas in tenancies have ceiling fans?
Question	Percentage Achieved?
Public building	-

<b>4.1 Air Quality - Non-Residential</b>		100%
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Score Contribution	This credit contributes 5.9% towards the category score.
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Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?
Question	Criteria Achieved ?
Public building	Yes

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

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

**Transport Overall contribution 9.0%**

		<b>25%</b>
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<b>1.4 Bicycle Parking - Non-Residential</b>		<b>100%</b>
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Score Contribution	This credit contributes 25% 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 ?
Public building	Yes
Question	Bicycle Spaces Provided ?
Public building	2

<b>1.5 Bicycle Parking - Non-Residential Visitor</b>		<b>0%</b>
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Score Contribution	This credit contributes 12.5% 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 ?
Public building	No
Question	Bicycle Spaces Provided ?
Public building	0

<b>1.6 End of Trip Facilities - Non-Residential</b>		<b>0%</b>
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Score Contribution	This credit contributes 12.5% 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 ?
Public building	-
Question	Number of lockers provided ?
Public building	-
Output	Min Showers Required
Public building	1
Output	Min Lockers Required
Public building	2

<b>2.1 Electric Vehicle Infrastructure</b>		<b>0%</b>
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Score Contribution	This credit contributes 25% 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>		<b>N/A</b> ✦ Scoped Out
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		N/A
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This credit was scoped out	N/A
<b>2.3 Motorbikes / Mopeds</b>	0%
Score Contribution	This credit contributes 25% 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%**

		<b>33%</b>
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<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%**

			<b>37%</b>
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	<b>1.1 Communal Spaces</b>		100%
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	Score Contribution	This credit contributes 12.5% 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	
	Public building	1,116 m <sup>2</sup>	
	Output	Minimum Common Space Required	
	Public building	317 m <sup>2</sup>	

	<b>2.1 Vegetation</b>		50%
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	Score Contribution	This credit contributes 50% 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	15 %	

	<b>2.2 Green Roofs</b>		0%
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	Score Contribution	This credit contributes 12.5% 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%
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	Score Contribution	This credit contributes 12.5% towards the category score.	
	Criteria	Does the development incorporate a green wall or green façade?	
	Question	Criteria Achieved ?	
	Project	No	

	<b>3.2 Food Production - Non-Residential</b>		0%
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	Score Contribution	This credit contributes 12.5% towards the category score.	
	Criteria	What area of space per occupant is dedicated to food production?	
	Question	Food Production Area	
	Public building	-	
	Output	Min Food Production Area	
	Public building	180 m <sup>2</sup>	

**Innovation Overall contribution 9.0%**

	0%
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<b>1.1 Innovation</b>	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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