



# Sustainability Management Plan

Project Name:	Salesian College, Mannix Campus – Year 7 and 8
Job Number:	8445
Date:	26/04/2024
Client:	Salesian College
Revision	04

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01	22/03/2024	Prepared by: Manuel Becerra	Reviewed by: Neema Swamy
02	23/04/2024	Prepared by: Manuel Becerra	Reviewed by: Kevin Xiao
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04	30/04/2024	Prepared by: Kevin Xiao	Reviewed by: -

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# 1 INTRODUCTION

NJM Design has been commissioned to prepare a Sustainability Management Plan (SMP) that outlines the initiatives that have been incorporated into the design for the proposed building at Salesian College, Mannix Campus – Year 7 and 8. This development includes a wide range of holistic sustainability measures which have been carefully integrated into the design of the development so that the residents will have the opportunity to reduce their ecological footprint without compromising their quality of life.

## 1.1 STATUTORY FRAMEWORK

The Monash City Council encourages the inclusion of Environmentally Sustainable Development (ESD) initiatives within the design process of new developments, which will result in more sustainable buildings within the community.

### 1.1.1 Environmentally Sustainable Development – 22.13-2

This report outlines how the development has incorporated key sustainable building aspects into the design process, referencing the specific objectives of 22.13-2. These objectives cover the following categories:

- Energy performance
- Water resources
- Indoor Environment Quality
- Stormwater Management
- Transport
- Waste Management
- Urban Ecology

## 1.2 PROJECT DESCRIPTION

The proposed college development is situated at Salesian College, Mannix Campus – Year 7 and 8. This development will consist of a new two storey college building and an extension of the existing building.

**Note: The BESS assessment has been carried out for the proposed new Year 7 building and the extension area of Year 8 building (Art room, Y8 Studio 1). Hence, the existing part of the Year 8 building has been excluded from the BESS assessment.**

Development Overview	
Site Area	Approximately 7,495.8 m <sup>2</sup>
Total Floor Area	Approximately 1,881.9 m <sup>2</sup>
Lower Ground	New Year 7 building and Extension of the Year 8 building (Art room)
Upper Ground	New Year 7 building and Extension of the Year 8 building (Y8 Studio 1)

## 2 ESD ASSESSMENT TOOLS

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There are a number of calculators and modelling programs available to help assess proposed developments against benchmarks set by the Victorian State Government, City Councils and the Building Code of Australia. This report has utilised the Built Environment Sustainability Scorecard (BESS) system which covers the overall sustainability of the project and STORM, which analyses stormwater treatment onsite.

### 2.1 BUILT ENVIRONMENT SUSTAINABILITY SCORECARD (BESS)

BESS is designed to support the ‘Sustainable Design Assessment in the Planning Process’ framework adopted by Victorian councils to ensure that sustainability is addressed within a proposed development. It assesses projects against a benchmark in 9 environmental categories where points are awarded for various design strategies implemented within the project.

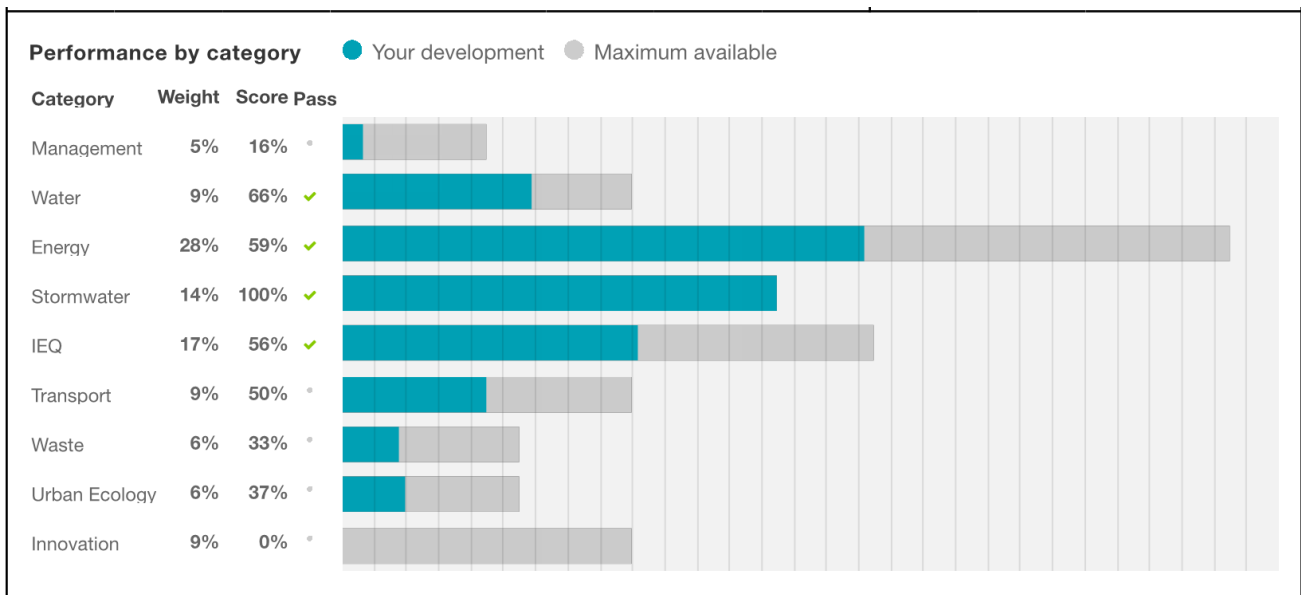
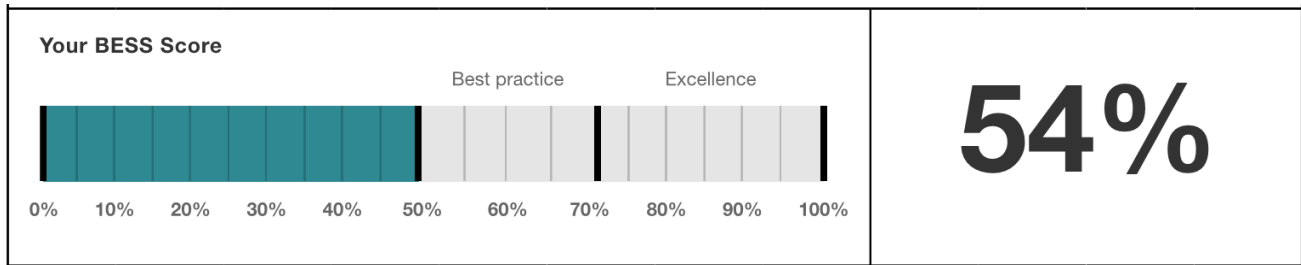
The overall BESS score (shown as a percentage figure) represents a percentage improvement over a benchmark project which is created from the project information inputted into the BESS tool by the user and is based on minimum requirements of the National Construction Code (NCC) and Minimum Energy Performance Standards.

### 2.2 STORM

Stormwater Treatment Objective – Relative Measure (STORM) was developed by Melbourne Water to simplify the analysis of stormwater treatment methods within a development. The calculator assesses Water Sensitive Urban Design (WSUD) measures on project sites and delivers a percentage result, determining whether best practice targets have been achieved. A score of 100% or higher means the treatment features meet all objectives.

### 3 ESD ACHIEVEMENTS

The following table outlines the scores achieved in each assessment tool used. This development has achieved a 'Pass' score in all the water, energy, and stormwater categories.



STORM Results		
<b>STORM Score</b>	<b>Required Score</b> 100%	<b>Project Score</b> Achieved over 100%

## 4 ESD INITIATIVES & IMPLEMENTATION

### 4.1 MANAGEMENT

Design Requirement	Implementation Stage	Responsibility
<b>Thermal Performance Modelling – Non-Residential</b>		
<p>A preliminary façade assessment has been undertaken in accordance with NCC 2019A1 Section J1.5 and the façade calculator of this preliminary assessment has been appended to this report.</p> <p>Refer to <b>Appendix B: Preliminary Façade Report</b>.</p>	Detailed Design	Architect/ ESD Consultant

### 4.2 WATER RESOURCES

Design Requirement	Implementation Stage	Responsibility
<b>Potable Water Use Reduction (Interior Uses)</b>		
<p>To improve water efficiency, efficient fixtures and fittings will be installed to ensure a reduction in the total water consumption at the premises.</p> <p>The development is committing to the following fixtures and fittings:</p> <ul style="list-style-type: none"> <li>-</li> <li>- Kitchen Taps: 6 Star WELS rating</li> <li>- Bathroom Taps: 6 Star WELS rating</li> <li>- WC: 4 Star WELS rating</li> <li>- Urinals: 5 Star WELS rating</li> </ul>	Detailed Design	Architect
<b>Rainwater Collection &amp; Reuse</b>		
<p>Reducing potable (mains) water consumption through a rainwater collection and re-use scheme ensures cost savings and the efficient use of water.</p> <p>Water will be collected across a total roof area of approx. 1,381 m<sup>2</sup> and stored in rainwater tanks with a total capacity of 10,000L. The water will be used to flush all toilets throughout the development and for irrigation purposes.</p> <p>Refer to the Water Sensitive Urban Design section of this report for the full details of stormwater management initiatives.</p>	Detailed Design	Hydraulic Engineer

### 4.3 ENERGY PERFORMANCE

Design Requirement	Implementation Stage	Responsibility
<b>Non-Residential - Thermal Performance Rating</b>		
<p>All exposed floors and ceilings that form part of the envelope will demonstrate a minimum 10% improvement in the required NCC 2019 insulation level; all facades (wall and glazing) will demonstrate meeting the required NCC 2019A1 facade calculator.</p> <p>A preliminary façade assessment has been undertaken in accordance with NCC 2019A1 Section J1.5 and the façade calculator of this preliminary assessment has been appended to this report.</p> <p>Additionally, heating/cooling systems and water heating systems will be within one Star of the most efficient equivalent capacity unit (or for heating/cooling systems the CoP and EER will be 85% or better than the most efficient equivalent capacity unit).</p>	Detailed Design	Architect / ESD Consultant
<b>Internal Lighting- Non-Residential</b>		
<p>Lighting systems are a significant source of greenhouse gas emissions in a development. Every effort should be made to minimise the energy consumption of these items.</p> <p>The maximum illumination power density for the commercial tenancies in at least 90% of the area of the relevant building class will meet the requirements in table J6.2a of the NCC 2019 Vol 1.</p>	Detailed Design	Lighting Designer / Electrical Engineer

### 4.4 STORMWATER MANAGEMENT

Design Requirement	Implementation Stage	Responsibility
<b>Stormwater Treatment</b>		
<p>The construction stormwater pollution reduction strategy is to be adhered to. Refer to WSUD Response for further details.</p> <p>The initiatives outlined in the Water Sensitive Urban Design (WSUD) Response comply with the council’s WSUD requirements, as demonstrated by achieving a STORM score greater or equal than <b>100%</b>.</p>	<p>Construction</p> <p>Detailed Design</p>	<p>Builder</p> <p>Architect</p>



#### 4.5 INDOOR ENVIRONMENT QUALITY – IEQ

Design Requirement	Implementation Stage	Responsibility
<p><b>Daylight Access – Non-residential</b></p> <p>Providing daylight to occupied spaces helps reduce energy consumption, allowing occupants to maintain a comfortably lit space without the use of electric lighting. This is especially important for spaces which will be primarily occupied during the day, which would otherwise need artificial lighting.</p> <p>It is mandated that at least 33% of the floor area needs to achieve the minimum daylight requirements.</p> <p>Assessment under the Green Star hand calculation method demonstrates that at least <b>41%</b> of the floor area of the regularly used spaces will achieve the daylight requirements.</p> <p>Refer to Appendix A: Daylight Analysis Mark-Up and Calculation for further information.</p>	Town Planning Submission	Architect / ESD Consultant
<p><b>Ventilation – Non-residential</b></p> <p>Introducing a high volume of outside air to regularly occupied spaces provide improved air quality and passive cooling opportunities. This credit can be achieved by effectively naturally ventilating or introducing fresh air through a mechanically ducted HVAC system.</p> <p>All primary spaces will be provided with O/A fans which will commit to provide <b>50%</b> increase on O/A provision from AS1668. O/A will be provided in the primary spaces to ensure that CO2 concentration in the rooms remains below <b>800ppm</b>.</p>	Town Planning Submission	Architect / ESD Consultant
<p><b>Thermal Comfort- Shading- Non- Residential</b></p> <p>Appropriate external shading devices for east, west and north facing glazing provide comfortable indoor spaces and reduce energy consumed for space cooling.</p> <p>At least <b>55%</b> of the east, north and west glazing to regular use floor areas are effectively shaded.</p>	Town Planning Submission	Architect

#### 4.6 TRANSPORT

Design Requirement	Implementation Stage	Responsibility
<b>Bicycle Parking- Non- Residential</b>		
For longer trips where walking is not an option, providing easy to use and secure bicycle storage can encourage staff to use a bicycle rather than a car. The development will provide 3 bicycle spaces for the employees and 44 bicycle spaces for students.	Town Planning Submission	Architect

#### 4.7 WASTE MANAGEMENT

Design Requirement	Implementation Stage	Responsibility
<b>Construction Waste- Building Re-Use</b>		
At least 30% of the existing building will be retained within the proposed development.	Town Planning Submission	Architect

#### 4.8 URBAN ECOLOGY

Design Requirement	Implementation Stage	Responsibility
<b>Vegetation</b>		
Approximately 20% of the site is covered in vegetation, encouraging residents to interact with the vegetated space and limiting the 'heat island' effect.	Town Planning Submission	Architect

## 4.9 BUILDING MATERIALS

The choice of building materials for a project can have a significant impact on the project’s overall environmental footprint. An overarching objective to select materials based on their environmental footprint has been implemented on this project. Materials will be selected based on the following attributes:

Design Requirement	Implementation Stage	Responsibility
<b>Embodied Energy</b> Total embodied energy will be considered when selecting materials. High embodied energy materials, such as concrete, aluminium and zinc will be avoided where possible. When these materials are necessary, suppliers that include a percentage of recycled materials must be selected.	Detailed Design	Architect
<b>Biodiversity and Habitat Destruction</b> All timber used for the project will be from sustainably managed sources. This will be demonstrated through appropriate certification schemes, such as PEFC or FSC.	Detailed Design	Architect
<b>End of Life</b> Consideration will be given to how materials may be disposed of. Recyclable materials will be chosen wherever possible. Preference will be given to suppliers with end-of-life recycling schemes.	Detailed Design	Architect
<b>Toxicity</b> Materials which have health risks during manufacture and installation will be avoided where possible. Low VOC products, E0 or E1 wood products, best practice PVC will be selected wherever practical.	Detailed Design	Architect
<b>Durability</b> Consideration will be given to the life expectancy of materials. Durable materials will be specified for relevant applications.	Detailed Design	Architect
<b>Maintenance</b> Materials that are easily maintained will be specified. This is likely to increase the life expectancy of the material. Materials that require cleaning agents that have environmental impacts will be avoided.	Detailed Design	Architect

## 5 WSUD RESPONSE

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Water will be collected across a total roof area of approx. 1,381 m<sup>2</sup> and stored in rainwater tanks with a total capacity of 10,000L. The water will be used to flush all toilets throughout the development and for irrigation purposes. Additionally, 400m<sup>2</sup> of canopies and roof will be treated through raingarden systems with a total area of 8 m<sup>2</sup>. Lastly, 222 m<sup>2</sup> of new roof will be treated through raingarden systems with a total area of 5 m<sup>2</sup>.

### 5.1 STATUTORY FRAMEWORK

Melbourne Water recommends that proposed developments provide a Water Sensitive Urban Design Response with the following objectives:

- To improve stormwater discharge quality:
  - Suspended Solids – 801% 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
- To promote stormwater re-use
- To mitigate the detrimental effect of development on downstream waterways
- To minimise peak stormwater flows and stormwater pollutants.
- To reintegrate urban water into the landscape to facilitate benefits such as microclimate cooling, local habitat, and provision of attractive spaces for community use and well-being.

A development is required to demonstrate that it meets the objectives of the clause by either:

- Meeting a 100% or higher rating on the STORM rating tool; or
- Meeting the required discharge quality using the MUSIC rating tool

Additionally, adequate maintenance and management procedures are required to ensure the stormwater treatment / reuse measures work as intended.

### 5.2 DESIGN DETAILS

Water will be collected across a total roof area of approx. 1,381 m<sup>2</sup> and stored in rainwater tanks with a total capacity of 10,000L. The water will be used to flush all toilets throughout the development and for irrigation purposes. Additionally, 400m<sup>2</sup> of canopies and roof will be treated through raingarden systems with a total area of 8 m<sup>2</sup>. Lastly, 222 m<sup>2</sup> of new roof will be treated through raingarden systems with a total area of 5 m<sup>2</sup>.

### 5.3 RAINWATER HARVESTING

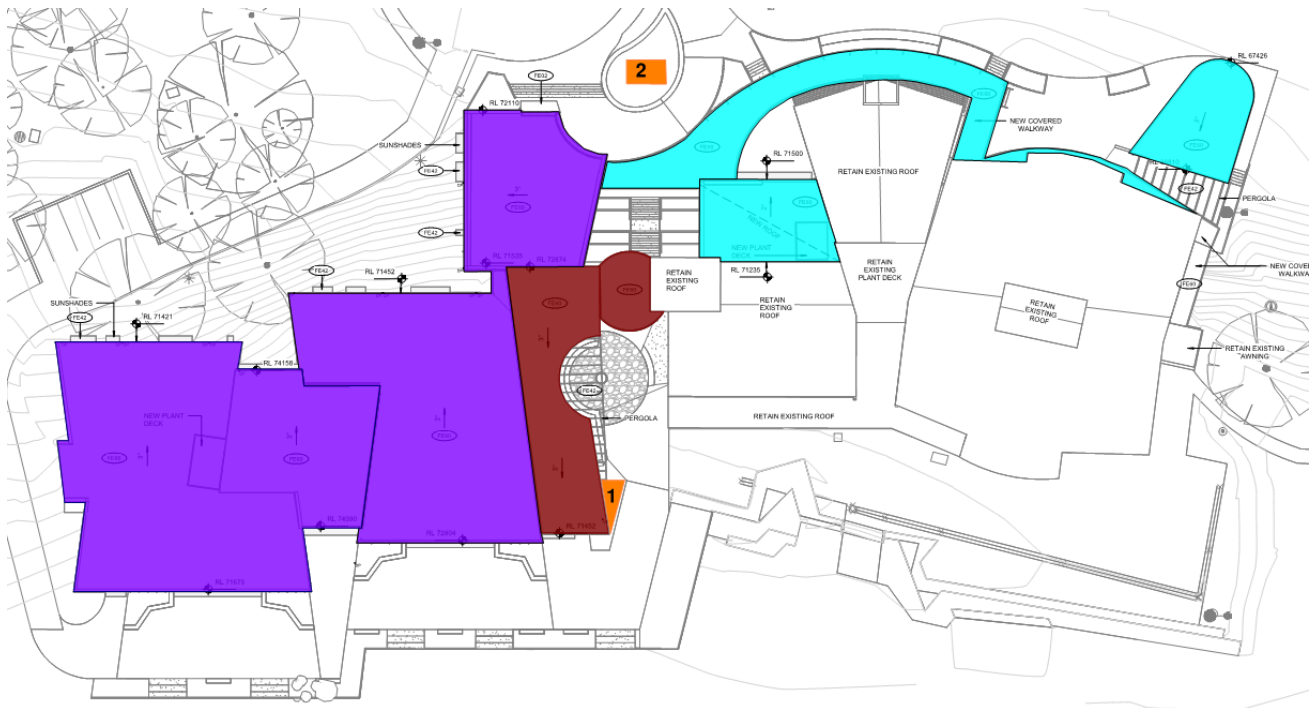






Figure 1: Rainwater harvesting schematic.

	New Roof to 10,000L rainwater Tank: 1381 m <sup>2</sup> (Rainwater tank location - Architect to confirm location)
	New Roof to 5 m <sup>2</sup> raingarden: 222 m <sup>2</sup> (‘1’ Raingarden indicative location only- Architect to confirm location)
	New Canopy and Roof to 8 m <sup>2</sup> raingarden: 400 m <sup>2</sup> (‘2’ Raingarden indicative location only- Architect to confirm location)
	Raingardens’ indicative location (indicative location only- Architect to confirm location)

**Note:** The current Year 8 building’s downpipe and stormwater drainage system are already in place. Adding a new system to the existing infrastructure would not be feasible due to cost implications and construction challenges. Therefore, only new construction areas will be evaluated in this WSUD assessment.

## 5.4 STORM ASSESSMENT

A Melbourne Water STORM assessment on the property has been undertaken to demonstrate compliance with best practice stormwater treatment objectives as set out in the Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO, 1997).



### STORM Rating Report

TransactionID: 0  
Municipality: MONASH  
Rainfall Station: MONASH  
Address: 2B Swanson Cres  
Chadstone  
VIC 3148  
Assessor: NJM Design  
Development Type: Other  
Allotment Site (m2): 2,003.00  
STORM Rating %: 103

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof to RWT	1,381.00	Rainwater Tank	10,000.00	100	91.00	47.00
Roof to Raingarden	400.00	Raingarden 100mm	8.00	0	128.10	0.00
Roof to Raingarden	222.00	Raingarden 100mm	5.00	0	129.25	0.00

Stormwater Treatment Objective – Relative Measure (STORM) was developed by Melbourne Water to simplify the analysis of stormwater treatment methods within a development. The calculator assesses Water Sensitive Urban Design (WSUD) measures on project sites and delivers a percentage result, determining whether best practice targets have been achieved. A score of 100% or higher means the treatment features meet all objectives.

Figure 2: STORM Rating Report

## 5.5 CONSTRUCTION SITE MANAGEMENT PLAN

The following requirements are to be met during onsite works to prevent excessive pollutants entering the local waterways.

1. Temporary drains are to be installed to minimise overland water flows and prevent erosion, especially in areas where water is likely to pool.
2. Temporary silt fences are to be installed on the lower end of the site to prevent excessive sedimentation from entering the stormwater system.
3. Temporary side entry filters to be installed to council stormwater pits to prevent sediment entering the stormwater system at the kerb inlet.
4. Stockpiles to be located away from the predominant overland stormwater pathway.
5. All site litter to be collected and placed in bins (covered if appropriate) so that it cannot end up in the stormwater systems.
6. Waste bins to be provided onsite for workers.

## 5.6 MAINTENANCE REQUIREMENTS

The following maintenance measures are required to be undertaken at 6 monthly intervals, when it is evident that a blockage has occurred or after a storm event. The body corporate is to be responsible for the maintenance of the stormwater system.

- Roof and gutters to be cleaned to remove leaves and other debris.
- All screens to be checked for blockages and cleaned if necessary.
- Sweep, wet vacuum or pressure hose courtyards and laneways to remove accumulated sediment and debris.
- Clear any drainage pipes in the courtyards and laneways that direct water to the stormwater system.

All pumps or specialist equipment to be installed as part of this system are to be maintained in accordance with the manufacturer's specifications.

## 6 MANAGEMENT, MAINTENANCE & MONITORING

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To ensure that the initiatives outlined in this report are implemented and maintained over time a copy this report will be provided to the building management team.

Inefficiently performing services impact on indoor environment qualities and may increase running costs and greenhouse gas emissions. The building management team will monitor all sustainability initiatives on-site and will schedule regular fine-tuning of building services and their ongoing maintenance, ensuring the building's maximum environmental performance is always achieved.

This development includes a wide range of holistic sustainability measures which have been carefully integrated into the design of the development so that the residents will have the opportunity to reduce their ecological footprint without compromising their quality of life. The proposed design and site-specific initiatives will contribute to the Monash City council's sustainable development vision.



## 7 APPENDICES

### 7.1 APPENDIX A: DAYLIGHT ANALYSIS MARK-UP AND CALCULATION

 Compliant area       Nominated area.

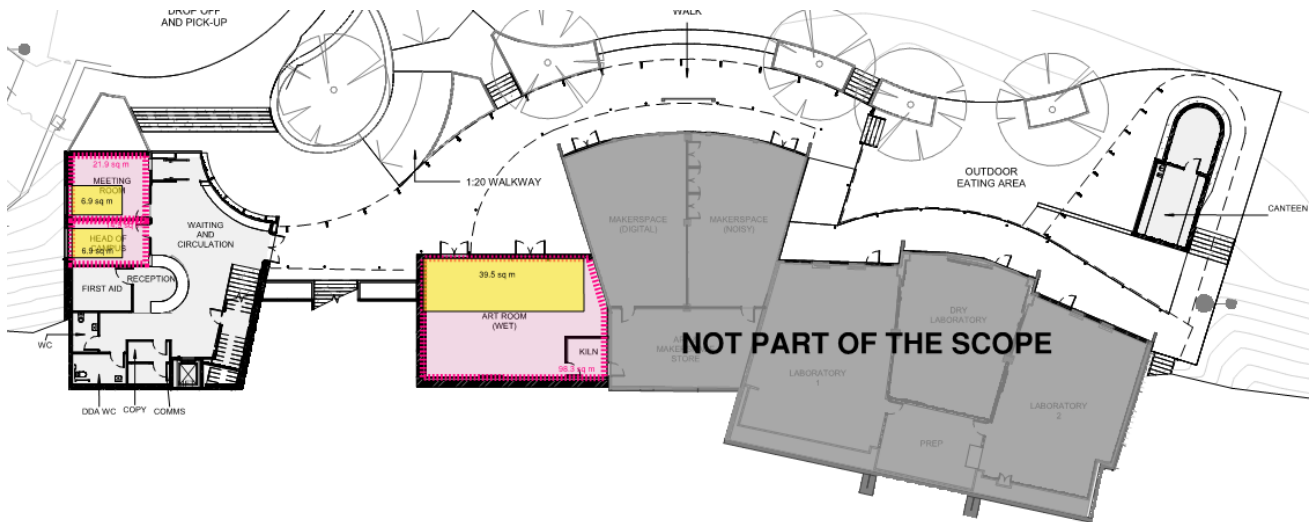


Figure 2 –Daylight Assessment Markup- Lower Ground Floor

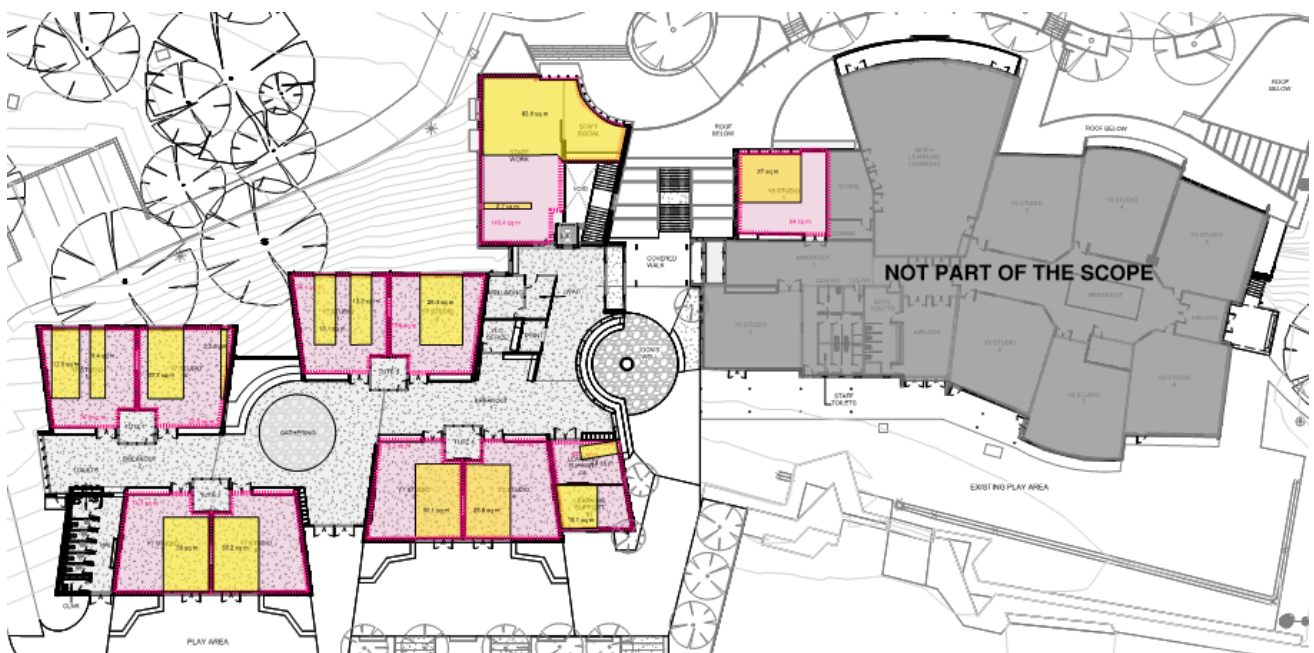


Figure 3 –Daylight Assessment Markup- Upper Ground Floor

**Note: The daylight assessment is done based on the preliminary set of drawings. As such, the assessment and results are subject to detailed revision that will be undertaken with additional information such as window/glazed door schedule and detailed sections.**

Room Name	Nominated regular use floor area (m2)	Zone of compliance (m2)
MEETING ROOM	21.9	6.9
HEAD OF CAMPUS	14.9	6.9
ART ROOM	98.3	39.5
Y8 STUDIO	64	27
STAFF WORK/SOCIAL	143.4	86.6
Y7 STUDIO 2	73.9	26.4
Y7 STUDIO 1	74.1	26.3
Y7 STUDIO 6	72.5	25.5
Y7 STUDIO 5	74.6	26.7
Y7 STUDIO 7	74.3	30
Y7 STUDIO 8	74.6	30.2
Y7 STUDIO 3	73.2	30.1
Y7 STUDIO 4	73.6	29.8
LEARNING SUPPORT	52.1	19.4
	985.4	411.3
<b>Total % of Zone of compliance</b>		<b>41.7%</b>

## 7.2 APPENDIX B: PRELIMINARY FAÇADE REPORT



**Project Details**

	North	East	South	West
Glazing Area (m²)	267.43	69.36	184.6	84.46
Glazing to Façade Ratio	34%	12%	23%	13%
Glazing References	GL01 GL02 GL03 GL04 GL05 GL06 GL07 GL08 GL09 GL_Int	GL01 GL02 GL_Int	GL01 GL02 GL03 GL04 GL05 GL_Int	GL01 GL02 GL03 GL04 GL05 GL06 GL_Int
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/m².K)	5.80	5.80	5.80	5.80
Average Glazing SHGC	0.63	0.30	0.59	0.59
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	524.25	521.1	601.92	551.9
Wall Types	Wall Spandrel	Wall	Wall Spandrel	Wall Spandrel
Methodology	Wall			
Wall Construction	Ext_R1.40 Wall_IntR1.40 Spandrel Config 1 - R2.0	Ext_R1.40 Wall_IntR1.40	Ext_R1.40 Wall_IntR1.40 Spandrel Config 1 - R2.0	Ext_R1.40 Wall_IntR1.40 Spandrel Config 1 - R2.0
Wall Thickness	0	0	0	0
Average Wall R-value (m².K/W)	1.21	1.40	1.38	1.22
Solar Absorbance	0.6	0.6	0.6	0.6

### 7.3 APPENDIX C: VOC AND FORMALDEHYDE EMISSIONS LIMITS

Table 1: Maximum Volatile Organic Compound Levels for construction materials. (Source: Green Building Council Australia, Green Star Multi Unit Residential v1 2009 Manual)

Product Type/Sub Category	Max TVOC Content (g/L of ready-to-use-product)
<b>Paints, Varnishes and Protective Coatings</b>	
Walls and ceilings – interior semi-gloss	16
Walls and ceilings – interior low sheen	16
Walls and ceilings – interior flat washable	16
Ceilings – interior flat	14
Trim – gloss, semi-gloss, satin, varnishes and wood stains	75
Timber and binding parameters	30
Latex primer for galvanised iron and zincalume	60
Interior latex undercoat	65
Interior sealer	65
One and Two pack performance coatings for floors	140
Any solvent-based coatings whose purpose is not covered in table	200
<b>Adhesives and Sealants</b>	
Indoor carpet adhesive	50
Carpet pad adhesive	50
Wood flooring and laminate adhesive	100
Rubber flooring adhesive	60
Sub-floor adhesive	50
Ceramic tile adhesive	65
Cove base adhesive	50
Dry wall and panel adhesive	50
Multipurpose construction adhesive (includes fire/waterproofing sealants)	70
Structural glazing adhesive	100
Architectural sealants	250

#### Carpets

Total VOC limit

4-PC (4-Phenylcyclohexene) 0.5mg/m<sup>2</sup> per hour

Table 2: Maximum Formaldehyde levels for processed wood products. (Source: Green Building Council Australia, Green Star Multi Unit Residential v1 2009 Manual)

Formaldehyde emission limit values for different testing methods			
Test Method	E1	E0	Super E0
AS 2098.11 for plywood	<1.0mg/L	<0.5mg/L	<0.3mg/L
AS 4266.16 for particle board	<1.0mg/L	<0.5mg/L	<0.3mg/L
For MDG	<1.5mg/L		
JIS A1460 not applicable to plywood	<1.0mg/L	<0.5mg/L	<0.3mg/L
JAS 233 for plywood	<1.0mg/L	<0.5mg/L	<1.0mg/L
EN 120 for particle board and MDF for plywood	<9.0mg/(100g)	<6.0mg/(100g)	
	<6.0mg/(100g)	<9.0mg/L	
DIN EN 717.1	<0.12mg/m <sup>3</sup> h	<0.08 mg/m <sup>3</sup> h	<0.04 mg/m <sup>3</sup> h
Din EN 717.2 not applicable to MDF	<0.12mg/m <sup>3</sup> h	<0.08 mg/m <sup>3</sup> h	<0.12mg/m <sup>3</sup> h

## **7.4 APPENDIX D: BUILT ENVIRONMENT SUSTAINABILITY SCORECARD (BESS) REPORT**

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# BESS Report

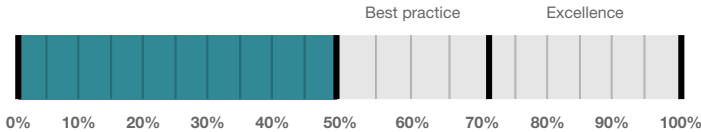
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 2B Swanson Cres Chadstone Victoria 3148. 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 Monash 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



# 54%

## Project details

**Address** 2B Swanson Cres Chadstone Victoria 3148  
**Project no** 5B32005C-R1  
**BESS Version** BESS-7

**Site type** Non-residential development  
**Account** esd@njmdesign.com.au  
**Application no.**  
**Site area** 7,495.00 m<sup>2</sup>  
**Building floor area** 1,881.90 m<sup>2</sup>  
**Date** 30 April 2024  
**Software version** 1.8.1-B.407



## Performance by category

● Your development ● Maximum available

Category	Weight	Score	Pass
Management	5%	16%	*
Water	9%	66%	✓
Energy	28%	59%	✓
Stormwater	14%	100%	✓
IEQ	17%	56%	✓
Transport	9%	50%	*
Waste	6%	33%	*
Urban Ecology	6%	37%	*
Innovation	9%	0%	*

## Buildings

Name	Height	Footprint	% of total footprint
YEAR 7 BUILDING AND YEAR 8 BUILDING EXTENSION	2	1,882 m <sup>2</sup>	100%

## Dwellings & Non Res Spaces

### Non-Res Spaces

Name	Quantity	Area	Building	% of total area
<b>Public building</b>				
YEAR 7 BUILDING AND YEAR 8 BUILDING EXTENSION	1	1,882 m <sup>2</sup>	YEAR 7 BUILDING AND YEAR 8 BUILDING EXTENSION	100%
<b>Total</b>	<b>1</b>	<b>1,881 m<sup>2</sup></b>	<b>100%</b>	

## Supporting information

### Floorplans & elevation notes

Credit	Requirement	Response	Status
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Transport 1.4	Location of non-residential bicycle parking spaces		-
Urban Ecology 2.1	Location and size of vegetated areas		-

### Supporting evidence

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 3.7	Average lighting power density and lighting type(s) to be used		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 1.4	A short report detailing assumptions used and results achieved.		-
Waste 1.1	Details regarding how the existing building is being reused on-site		-

## Credit summary

### Management Overall contribution 4.5%

		<b>16%</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>
		N/A
3.3 Metering - Common Areas		N/A <span>✦ Scoped Out</span>
		N/
4.1 Building Users Guide		0%

### Water Overall contribution 9.0%

		<b>Minimum required 50%</b>	<b>66%</b>	<span>✔ Pass</span>
1.1 Potable Water Use Reduction		80%		
3.1 Water Efficient Landscaping		N/A	<span>✦ Scoped Out</span>	
				landscape area connected to RWT
4.1 Building Systems Water Use Reduction		0%		



**Energy Overall contribution 27.5%**

		Minimum required 50%	59%	✔ Pass
1.1 Thermal Performance Rating - Non-Residential			37%	
2.1 Greenhouse Gas Emissions			100%	
2.2 Peak Demand			100%	
2.3 Electricity Consumption			100%	
2.4 Gas Consumption			100%	
2.6 Electrification			0%	⊘ Disabled
Credit is available when the energy supply is set to all-electric (no gas or wood).				
3.1 Carpark Ventilation			N/A	⚡ Scoped Out
N/A				
3.2 Hot Water			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			0%	⊘ Disabled
No solar PV renewable energy is in use.				
4.4 Renewable Energy Systems - Other			0%	⊘ Disabled
No other (non-solar PV) renewable energy is in use.				

**Stormwater Overall contribution 13.5%**

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

**IEQ Overall contribution 16.5%**

		Minimum required 50%	56%	✔ Pass
1.4 Daylight Access - Non-Residential			41%	✔ Achieved
2.3 Ventilation - Non-Residential			66%	✔ Achieved
3.4 Thermal comfort - Shading - Non-Residential			70%	
3.5 Thermal Comfort - Ceiling Fans - Non-Residential			0%	
4.1 Air Quality - Non-Residential			100%	

**Transport Overall contribution 9.0%**

		<b>50%</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		N/A  Scoped Out
		N/A
2.2 Car Share Scheme		N/A  Scoped Out
		N/A
2.3 Motorbikes / Mopeds		N/A  Scoped Out
		N/A

**Waste Overall contribution 5.5%**

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

**Urban Ecology Overall contribution 5.5%**

		<b>37%</b>
1.1 Communal Spaces		0%
2.1 Vegetation		75%
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 1%

<b>1.1 Pre-Application Meeting</b>		0%	
Score Contribution	This credit contributes 50.0% 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%	
Score Contribution	This credit contributes 33.3% towards the category score.		
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2019 Section J1.5?		
Question	Criteria Achieved ?		
Public building	Yes		
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2019 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
This credit was scoped out	N/A		
<b>3.3 Metering - Common Areas</b>		N/A	✦ Scoped Out
This credit was scoped out	N/		
<b>4.1 Building Users Guide</b>		0%	
Score Contribution	This credit contributes 16.7% towards the category score.		
Criteria	Will a building users guide be produced and issued to occupants?		
Question	Criteria Achieved ?		
Project	No		

**Water** Overall contribution 6% Minimum required 50%

<b>Water Approach</b>	
What approach do you want to use for Water?:	Use the built in calculation tools
<b>Project Water Profile Question</b>	
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>Water fixtures, fittings and connections</b>	
Showerhead:	Scope out
Bath:	Scope out
Kitchen Taps:	>= 6 Star WELS rating
Bathroom Taps:	>= 6 Star WELS rating
Dishwashers:	Scope out
WC:	>= 4 Star WELS rating
Urinals:	>= 5 Star WELS rating
Washing Machine Water Efficiency:	Scope out
Which non-potable water source is the dwelling/space connected to?:	RWT
Non-potable water source connected to Toilets:	Yes
Non-potable water source connected to Laundry (washing machine):	No
Non-potable water source connected to Hot Water System:	No
<b>Rainwater Tank</b>	
What is the total roof area connected to the rainwater tank?: RWT	1,381 m <sup>2</sup>
Tank Size: RWT	10,000 Litres
Irrigation area connected to tank: RWT	100 m <sup>2</sup>
Is connected irrigation area a water efficient garden?: RWT	Yes
Other external water demand connected to tank?: RWT	-

<b>1.1 Potable Water Use Reduction</b>		80%
Score Contribution	This credit contributes 83.3% towards the category score.	
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.	
Output	Reference	
Project	3032 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	1795 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	1273 kL	
Output	% Reduction in Potable Water Consumption	
Project	58 %	
Output	% of connected demand met by rainwater	
Project	60 %	
Output	How often does the tank overflow?	
Project	Very Often	
Output	Opportunity for additional rainwater connection	
Project	278 kL	
<b>3.1 Water Efficient Landscaping</b>		N/A  Scoped Out
This credit was scoped out	landscape area connected to RWT	
<b>4.1 Building Systems Water Use Reduction</b>		0%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	Where applicable, have measures been taken to reduce potable water consumption by >80% in the buildings air-conditioning chillers and when testing fire safety systems?	
Question	Criteria Achieved ?	
Project	No	

**Energy** Overall contribution 16% Minimum required 50%

Use the BESS Deem to Satisfy (DtS) method for Energy?:	Yes
Do all exposed floors and ceilings (forming part of the envelope) demonstrate a minimum 10% improvement in required NCC2019 insulation levels (total R-value upwards and downwards)?:	Yes
Does all wall and glazing demonstrate meeting the required NCC2019 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
<b>Non-Residential Building Energy Profile</b>	
Heating, Cooling & Comfort Ventilation - Electricity Reference fabric & services:	-
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services:	-
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & services:	-
Heating - Gas - Reference fabric and services:	0.0 MJ
Heating - Gas - Proposed fabric and Reference services:	0.0 MJ
Heating - Gas - Proposed fabric and services:	0.0 MJ
Heating - Wood - reference fabric and services:	-
Heating - Wood - proposed fabric and reference services:	-
Heating - Wood - proposed fabric and services:	-
Hot Water - Electricity - Reference:	-
Hot Water - Electricity - Proposed:	-
Hot Water - Gas - Baseline:	0.0 MJ
Hot Water - Gas - Proposed:	0.0 MJ
Lighting - Reference:	-
Lighting - Proposed:	-
Peak Thermal Cooling Load - Reference:	-
Peak Thermal Cooling Load - Proposed:	-
<b>1.1 Thermal Performance Rating - Non-Residential</b>	<b>37%</b>
Score Contribution	This credit contributes 36.4% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2019 Section J)?

<b>2.1 Greenhouse Gas Emissions</b>		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?		
<b>2.2 Peak Demand</b>		100%	
Score Contribution	This credit contributes 4.5% towards the category score.		
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?		
<b>2.3 Electricity Consumption</b>		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual electricity consumption against the benchmark?		
<b>2.4 Gas Consumption</b>		100%	
Score Contribution	This credit contributes 9.1% towards the category score.		
Criteria	What is the % reduction in annual gas consumption against the benchmark?		
<b>2.6 Electrification</b>		0%	⊘ Disabled
This credit is disabled	Credit is available when the energy supply is set to all-electric (no gas or wood).		
<b>3.1 Carpark Ventilation</b>		N/A	⊕ Scoped Out
This credit was scoped out	N/A		
<b>3.2 Hot Water</b>		100%	
Score Contribution	This credit contributes 4.5% 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 9.1% 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 J6.2a of the NCC 2019 Vol 1?		
Question	Criteria Achieved ?		
Public building	Yes		
<b>4.1 Combined Heat and Power (cogeneration / trigeneration)</b>		N/A	⊕ Scoped Out
This credit was scoped out	No cogeneration or trigeneration system in use.		
<b>4.2 Renewable Energy Systems - Solar</b>		0%	⊘ Disabled
This credit is disabled	No solar PV renewable energy is in use.		
<b>4.4 Renewable Energy Systems - Other</b>		0%	⊘ Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.		

**Stormwater** Overall contribution 14% Minimum required 100%

Which stormwater modelling are you using?:		Melbourne Water STORM tool
<b>1.1 Stormwater Treatment</b>		100%
Score Contribution	This credit contributes 100.0% towards the category score.	
Criteria	Has best practice stormwater management been demonstrated?	
Question	STORM score achieved	
Project	102	
Output	Min STORM Score	
Project	100	



**IEQ** Overall contribution 9% Minimum required 50%

<b>1.4 Daylight Access - Non-Residential</b>		41%	✓ Achieved
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	41 %		
<b>2.3 Ventilation - Non-Residential</b>		66%	✓ Achieved
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	0 %		
Criteria	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012?		
Question	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668:2012?		
Public building	50 %		
Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?		
Question	Value		
Public building	800 ppm		
<b>3.4 Thermal comfort - Shading - Non-Residential</b>		70%	
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	55 %		
<b>3.5 Thermal Comfort - Ceiling Fans - Non-Residential</b>		0%	
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	0 %		
<b>4.1 Air Quality - Non-Residential</b>		100%	
Score Contribution	This credit contributes 5.9% towards the category score.		
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 4%

<b>1.4 Bicycle Parking - Non-Residential</b>		100%	
Score Contribution	This credit contributes 50.0% 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	3		
<b>1.5 Bicycle Parking - Non-Residential Visitor</b>		0%	
Score Contribution	This credit contributes 25.0% 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	44		
<b>1.6 End of Trip Facilities - Non-Residential</b>		0%	
Score Contribution	This credit contributes 25.0% 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	0		
Question	Number of lockers provided ?		
Public building	0		
Output	Min Showers Required		
Public building	1		
Output	Min Lockers Required		
Public building	3		
<b>2.1 Electric Vehicle Infrastructure</b>		N/A	✦ Scoped Out
This credit was scoped out	N/A		
<b>2.2 Car Share Scheme</b>		N/A	✦ Scoped Out
This credit was scoped out	N/A		
<b>2.3 Motorbikes / Mopeds</b>		N/A	✦ Scoped Out
This credit was scoped out	N/A		

**Waste** Overall contribution 2%

<b>1.1 - Construction Waste - Building Re-Use</b>		100%
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	Yes	
<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>		0%
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	No	

**Urban Ecology** Overall contribution 2%

<b>1.1 Communal Spaces</b>	0%
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	0.0 m <sup>2</sup>
Output	Minimum Common Space Required
Public building	119 m <sup>2</sup>
<b>2.1 Vegetation</b>	75%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?
Question	Percentage Achieved ?
Project	20 %
<b>2.2 Green Roofs</b>	0%
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%
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%
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	48 m <sup>2</sup>

**Innovation** Overall contribution 0%

<b>1.1 Innovation</b>	0%
Score Contribution	This credit contributes 100.0% towards the category score.
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?

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