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**ADVERTISED
PLAN**

B L U E B E E
SUSTAINABLE SERVICES

Water Sensitive Urban Design Report

For the: St Jude Primary School in Scoresby

Presented to: Knox City Council

JANUARY 29, 2024

REFERENCE: 23121

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Revision History:

Author	Revision	Date	Content/Changes
Jessica Daaboul	0	23.01.2024	Preliminary WSUD assessment
Jessica Daaboul	1	29.01.2024	WSUD to support planning permit

Executive Summary

This Water Sensitive Urban Design (WSUD) report is prepared for the proposed school building development withing the St Jude Scoresby development located at 53 George St Scoresby and is based on the external works drawing set prepared by Law Architects dated 16 January 2024. It outlines the development’s WSUD initiatives and commitments and assesses their equivalence to best practice environmental performance. The planning scheme requirement of the City of Knox are to demonstrate best practice WSUD performance.

In order to guide project’s compliance with the planning scheme and set the WSUD initiatives, the following tools are used for benchmarking:

- STORM rating achieving or exceeding 100%

A summary of the project’s key ESD commitments is included below:

Development’s Sustainability Commitments		
Commitment	Implication	Relevant to
Management		
Rainwater Tank	Considerable portion of roof catchment collected in RWT. Despite not having toilets in the building, the building will use collected water to supply toilets in the neighbouring building.	Architect - Builder
Provision of raingardens	463sqm of trafficable areas are treated by a raingarden before being directed to stormwater	Architect - Builder
Increase in permeability and treatment	The majority of the existing site was an asphalt sealed surface with no treatment of the catchment rainwater before discharge into the stormwater mains (with the exception of one RWT) achieving less than 40% STORM. The proposed development includes raingardens and a RWT and achieves 100% STORM score.	
Stormwater Management		
Stormwater	STORM score of 100% is maintained and calculation updated as per changes	Contractor

1 - Introduction

This Water Sensitive Urban Design report sets the requirements for the WSUD elements to be incorporated into the school building development withing the St Jude Scoresby development. It is to be used throughout the project's design and construction to assist consultants, architects and contractors in meeting the building's sustainability objectives.

This report captures initiatives necessary to ensure that the development meets the WSUD requirements of the Knox City Council.

The analysis is based on the external works drawing set prepared by Law Architects dated 16 January 2024. This report starts with a site description, then provides the references, benchmarks and council's planning scheme requirements. Commitments to demonstrate compliance are then outlined. This report concludes with a discussion of the next steps.

2- Site Description

The site is located at located at 53 George St Scoresby (Figure 1) and has an approximate surface area of 1472sqm. The current building is the location of a school building therefore the site has been previously developed.



Figure 1: Existing Site

3- References, Benchmarks, and Planning scheme requirements

This section provides the benchmarks and the sections demonstrating compliance with the benchmarks.

3.1- Planning scheme

This assessment provides guidelines for the project to meet the following Planning Scheme requirements related to stormwater management in urban developments in the city of Knox:

Planning scheme requirements		
Clause	Purpose (reduced)	Project Commitment
53.18-5	<p>Stormwater management objectives for buildings and works</p> <p>To encourage stormwater management that maximises the retention and reuse of stormwater.</p> <p>To encourage stormwater management that contributes to cooling, local habitat improvements and provision of attractive and enjoyable spaces.</p> <p>To encourage development that reduces the impact of stormwater on the drainage system and filters sediment and waste from stormwater prior to discharge from the site.</p> <p>To ensure that industrial and commercial chemical pollutants and other toxicants do not enter the stormwater system.</p>	<p>Section 3.4 and section 4:</p> <ul style="list-style-type: none"> • 100% STORM score • Use of RWT • Use of raingardens
53.18-6	<p>Site management objectives</p> <p>To protect drainage infrastructure and receiving waters from sedimentation and contamination.</p> <p>To protect the site and surrounding area from environmental degradation prior to and during construction of subdivision works</p>	<p>Section 4</p> <p>Construction phase stormwater pollution reduction strategy</p>

3.2- Stormwater

Hard and impervious surfaces, such as buildings, roads and car parks lead to excess stormwater runoff that would otherwise have been retained on site in natural forests. This development is committed to reduce stormwater runoff and improve the quality of our waterways.

This is demonstrated by achieving best practice reduction in total suspended solids (TSS), total phosphorus (TP) and total nitrogen (TN) loads.

These reductions are achieved here through a 100% STORM score using Melbourne Water STORM tool. Below is a mark-up showing assumptions taken to this end:

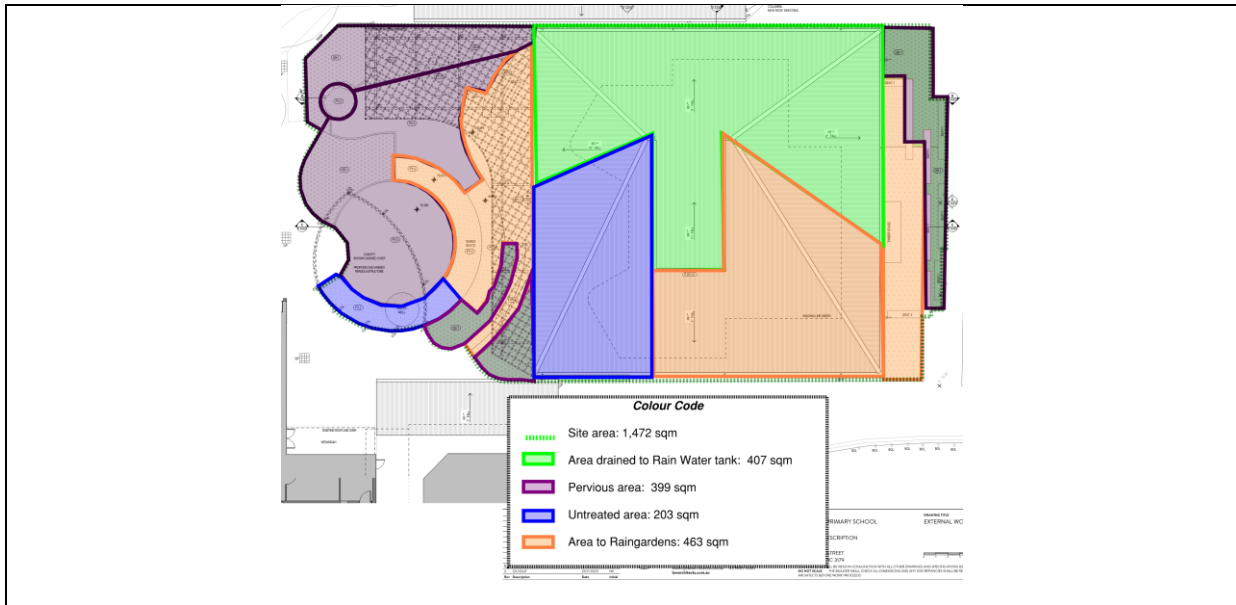


Figure 3: 100% storm score

The design team and head contractor will ultimately be responsible for ensuring that the STORM score of 100% is achieved (or equivalent tool), and if assumptions taken here become unsuitable throughout the course of the project, the design team and head contractor will be required to adopt alternative assumptions such that equivalence with a 100% STORM score is maintained.

4- Stormwater Managements and System Maintenance

Below are further details addressing clause 53.18 pertaining to stormwater management beyond harvesting of rainwater:

5.1- Stormwater management report:

A STORM score of over 100% has been achieved as detailed in Appendix A to demonstrate achieving best practice stormwater pollution reduction targets. It is required that the total storm score claimed in this report be achieved using Appendix A or an equivalent storm score.

5.2- Stormwater management layout:

Refer to Appendix A for treatment areas and architectural drawings for location of rainwater tanks.

5.3- Site management plan:

Refer to Construction Management Plan to be prepared by the builder for stormwater control measures during construction.

Plan to contain and be not limited to initiatives similar to the following or to commit to initiatives with similar outcome:

- Silt fences or the like to prevent sediment infiltration into the stormwater system.
- Buffer strips or the like for the prevention of stormwater runoff.

- Gravel filters or similar at stormwater inlets to prevent site contaminant infiltration into the stormwater system.
- Site is to be kept clean.

5.4- Maintenance program:

A maintenance program which sets out future operation and maintenance arrangements.

The WSUD objectives are achieved through a rainwater capture and reuse system. The maintenance requirements for this system are:

- Rainwater tank:
 - Maintenance in accordance with Handbook HB-230:2008 produced by Standards Australia
 - Access will be via the watertight maintenance panel, noting that it is a confined space and appropriate precautions must be taken.
 - Pumps and filtration systems maintenance to be in accordance with manufacturer requirements

As the majority of rainwater will be collected, the stormwater quality leaving the site will be improved and quantity reduced compared to a conventional building.

5- Maintenance schedule

The below minimum maintenance intervals are proposed for the building's systems, these intervals are to be confirmed upon building users guide submission. This information is preliminary only, for detailed maintenance information and more updated schedule refer to building users guide.

Item	Example Procedure	Proposed maintenance interval
Gutters and downpipes	Inspection & cleaning	In accordance with the relevant standard, and supplier's recommendations (otherwise semi-annually).
First Flush system	Inspection & cleaning	In accordance with the relevant standard, and supplier's recommendations (otherwise semi-annually).
Pumps	Inspection & testing	In accordance with the relevant standard, and supplier's recommendations (otherwise annually).
Plumbing	Inspection, cleaning & testing	In accordance with the relevant standard, and supplier's recommendations (otherwise annually).
Leaf diverters	Inspection & cleaning	In accordance with the relevant standard, and supplier's recommendations (otherwise semi-annually).
Rainwater tank	Inspection & reparation	In accordance with the relevant standard, and supplier's recommendations (otherwise every semi-annually).
Rainwater tank	Sediment build-up cleaning	In accordance with the relevant standard, and supplier's recommendations (otherwise annually).
Raingarden	Clean inlets, outlets, check for damage or erosion, vegetation cover, algae growth, litter, check filter media and any ponding.	In accordance with the relevant standard, and supplier's recommendations (otherwise every 3 months and ponding check after major storm events).
Soggy and boggy soils	Inspect bedding and drainage layer	In accordance with the relevant standard, and supplier's recommendations (otherwise every 3 to 6 months).

	for material status and blockage by fines, repair or replace if needed.	
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6- Appendix A – Storm Rating Report and Details

The builder is required to adhere to Melbourne Water’s stormwater management guidelines during the construction stage. RWT tank and stormwater system design and installation (by others) to comply with the Building Code of Australia, Australian standards (including: AS/NZS 2179.1; AS/NZS 3500.3.2; AS/NZS 3500.3 etc...) and rainwater tank design and installation handbook.

This report does not constitute a civil engineering design and nor does it replace any civil engineering designs or requirements.

This report does not constitute a flood management design and nor does it replace any flood management designs or requirements.

This report assumes all materials, designs, sizing and construction processes are expected to be compliant with the building code, relevant codes and Australian standards.

The drawings and values provided indicate the performance required and design intent but not material specifications or detailed site implementation. The builder is required to implement the design intent indicated in this report in accordance with the BCA and relevant Australian codes and standards.

Any products indicated in this report are suggestions only and have been suggested in relation to their WSUD performance. The results of any computer simulations within this report do not guarantee future performance.

The design team and head contractor will ultimately be responsible for ensuring that the STORM score of 100% is achieved (or equivalent tool), and if assumptions taken here become unsuitable throughout the course of the project, the design team and head contractor will be required to adopt alternative assumptions such that equivalence with a 100% STORM score is maintained.



STORM Rating Report

TransactionID: 0
Municipality: KNOX
Rainfall Station: KNOX
Address: 53 GEORGE STREET

SCORESBY
VIC 3179

Assessor: Jessica Daaboul
Development Type: Commercial/Retail
Allotment Site (m2): 1,472.00
STORM Rating %: 100

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof to rainwater tank	407.00	Rainwater Tank	5,000.00	20	115.90	62.00
Roof to raingarden	258.00	Raingarden 100mm	6.00	0	129.55	0.00
Trafficable to raingarden	204.80	Raingarden 100mm	4.00	0	127.80	0.00
Untreated	203.00	None	0.00	0	0.00	0.00

Date Generated: 22-Jan-2024

Program Version: 1.0.0



B L U E B E E
SUSTAINABLE SERVICES

ESD Mark-Up

For the: St Jude's Primary School, Scoresby

Presented to: Law Architects

OCTOBER 30, 2023

Reference: 23121 St Jude's PS Scoresby



LEGEND
 EXISTING BUILDINGS

Measures for achieving a better BESS score:

Thermal performance:

1. All exposed floors and ceilings to have 10% improvement in required NCC2019 insulation level.
2. Well shaded structure for reduced solar heat gains especially along the North, East and West.
3. Glazing with good thermal performance.

Water:

1. A rainwater tank can be provided for storm water collection and re-use.
2. Use water fixtures with high WELS rating.

Energy:

1. Heating and cooling systems within one star of the most efficient equivalent capacity unit available.
2. Water heating system should be within one star of the best available or 85% or better than the most efficient equivalent capacity.

IEQ:

1. Good daylight access (>30% of the frequently used areas within the building has DF more than 2%).
2. 100% of the regular use areas (all building spaces) are effectively naturally ventilated.
3. All paints, sealants, adhesives, carpets, and engineered wood used indoors should have low VOC limits (meet the maximum total indoor pollutant emission limits).

Urban Ecology:

1. Breakout area is a communal space.
2. Areas dedicated for food production vegetation.
3. increased level of permeability (to be confirmed).
4. Water efficient landscaping.

Legend

- Water
- Mechanical
- Thermal performance
- Materials and Waste
- Electrical and Energy



LAW ARCHITECTS

PROJECT DETAILS
 ST JUDES PRIMARY SCHOOL

DRAWING TITLE
 PROPOSED GROUND FLOOR

STATUS
 TOWN PLANNING

LAW ARCHITECTS PTY LTD
 ACN: 128 424 493 ABRN: 87 541 639 619
 The Old Dairy, 45 Woburn St, Fitzroy North 3058
 studio@lawarchitects.com.au 03 9489 9200
 lawarchitects.com.au

49 GEORGE STREET, SCORESBY, VIC 3179

Date: OCTOBER 2023

Drawn: JD

Scale: 1:100 @ A1



Project #
 2020-19

Drawing #
 TPD4

Revision

Rev	Description	Date

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND SPECIFICATIONS ISSUED TO THE BUILDER. DO NOT SCALE - THE BUILDER SHALL CHECK ALL DIMENSIONS AND ANY DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECTS BEFORE WORK PROCEEDS