CONSULTANTS

Level 2
6 Palmer Pde
Cremorne VIC 3121

03 9885 4335

ENGINEERS

MANAGERS

INFRASTRUCTURE
PLANNERS

DEVELOPMENT
CONSULTANTS

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OUR LADY OF SION COLLEGE

1065 WHITEHORSE ROAD BOX HILL VIC 3128

STORMWATER MANAGEMENT PLAN

VIC210277

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STORMWATER MANAGEMENT

Design

This Stormwater Management Plan takes into account the Victorian best practice stormwater performance targets as set out in the Urban Stormwater Best Practice Environmental Management Guidelines (BPEMG). As per the guideline stormwater discharged from the site to authority's point of discharge should have the following reductions.

- 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

In addition to achieving the above requirements, WSUD requirements will also be met by rainwater harvesting and by installing SPEL Hydrosystem. A MUSIC model has been conducted to demonstrate the treatment train effectiveness in meeting those requirements.

It should be noted that MUSIC model has been carried out only for the proposed development.

Based on the MUSIC model, the following are required to meet the above objectives.

- Water runoff from all roofed areas to be collected to a minimum of 20KL water tank. It should also be noted that the level 3 canopy area is to be collected to a 2KL water tank.
- The rainwater tank to be connected to all the toilets for reuse of water and also for irrigation
- Rainwater tank collection, storage and distribution to be designed and installed in accordance with plumbing regulations and relevant Australian Standards including AS/NZS 3500.3 and HB230-2008 Rainwater Tank Design and Installation Handbook
- Stormwater runoff from carpark and all paved areas to have primary treatment through gross pollutant traps such as SPEL stormsacks in each stormwater pit in the paved areas.
- All site runoffs including the tank overflow, to be captured in a stormwater quality improvement device before discharging to council's approved legal point of discharge
- SPEL Hydrosystem treatment or equivalent device has been recommended to treat the stormwater prior to leaving the site
- On-site detention (OSD) requirements do not form the part of this report. Any OSD requirements to be confirmed by the council engineer and to be addressed during the design development stage

Figure 1 below provides high level indicative arrangements/model set up of the stormwater management of the site and Figure 2 shows the effectiveness of the proposed arrangement.

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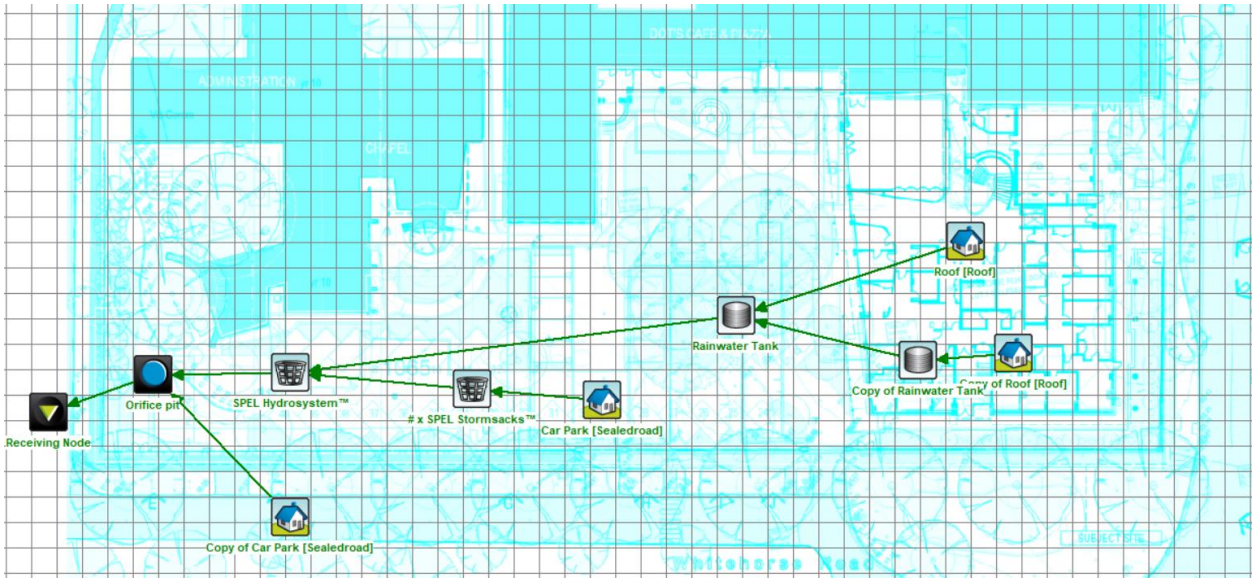
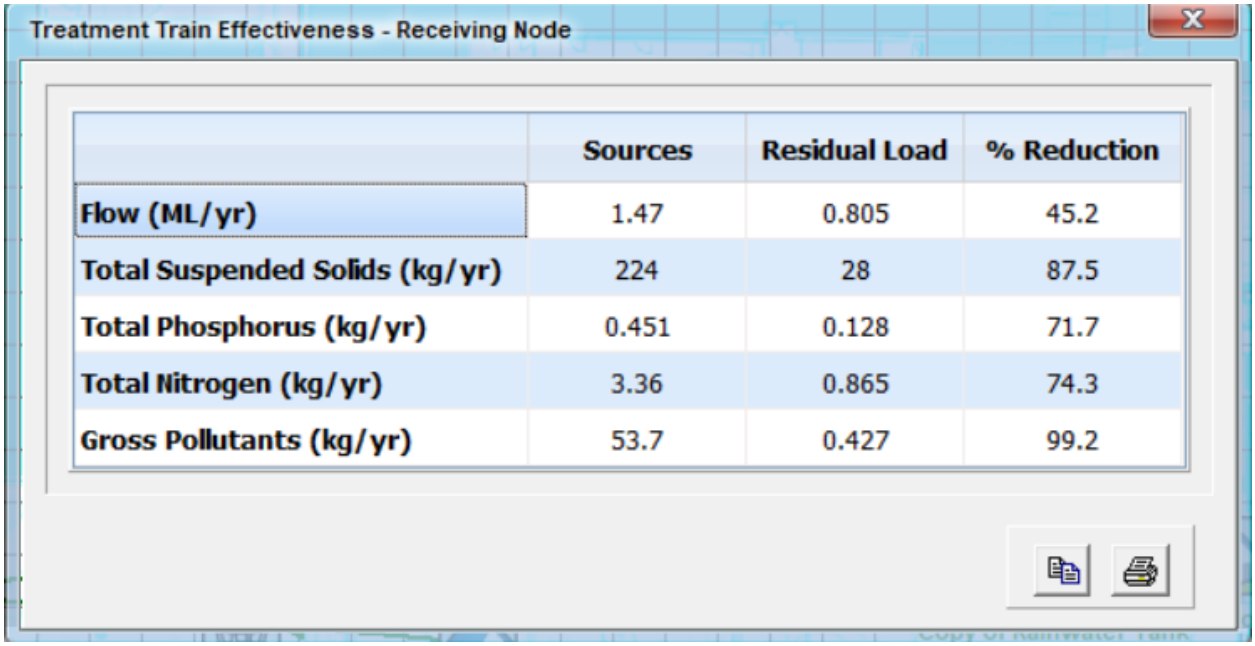


Figure 1: MUSIC Model Setup



	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.47	0.805	45.2
Total Suspended Solids (kg/yr)	224	28	87.5
Total Phosphorus (kg/yr)	0.451	0.128	71.7
Total Nitrogen (kg/yr)	3.36	0.865	74.3
Gross Pollutants (kg/yr)	53.7	0.427	99.2

Figure 2: Treatment Train Effectiveness Result from MUSIC Model

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CONSTRUCTION PHASE

During Construction, the building shall implement best practice stormwater protection by keeping stormwater clean, which can be downloaded via: https://www.clearwatervic.com.au/user-data/resource-files/Keeping_Our_Stormwater_Clean-A_Builders_Guide[1].pdf

At minimum, during construction phase, the contractor shall provide the following works to comply with requirements.

- Manage all construction activities within site boundaries
- Retain vegetation around the perimeter of the site wherever possible throughout construction up until landscaping
- Cover stockpiles, contain litter in bins within the site
- Manage any chemical disposal as per EPA guidelines
- Provide soil and erosion control plan and at all times and remain responsible for compliance with all laws and regulations pertaining to safety and protection of the environment
- Provide crushed rock at site entrance to provide dry access point to vehicles
- Provide geotextile filter fabric fence along the whole site boundary to prevent any sediment from entering the adjacent lots or downstream stormwater systems
- Wrap the grated pit covers in geotextile fabric during construction works to prevent the council's drainage infrastructure and receiving waters from sedimentation and contamination
- Ensure to keep the access road clean of all construction material during and prior to construction works
- Submit soil and sediment erosion control plan to council prior to construction

Further to above, any specific requirements set by Bendigo City Council will need to be complied by the contractor during the construction stage.

If you have any queries regarding the above response, please feel free to contact us on 9885 4335.

Yours sincerely,

Jude Linton

Civil Engineer

ACOR Consultants (VIC) Pty Ltd

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