

Appendix 14

Stormwater Review

Date: 16/09/2024

Glenstone Group
1/124 Russell Street
Emu Plains, 2750, NSW

Attention: Mr. Dominic Hogan

Re: Civil Engineering Concept
SUBJECT PREMISES: 1-4 Old Bathurst Road, Emu Plains, NSW 2750
DESCRIPTION OF WORKS: Industrial Subdivision and Childcare Centre

Dear Dominic,

Epicentre was engaged by Glenstone Group to complete the civil engineering works for an industrial subdivision and childcare centre at 1-4 Old Bathurst Road, Emu Plains (herein referred to as "The Development" or "The Site").

This letter is an amendment to the Concept Stormwater Strategy report prepared by North Western Surveys (22nd June, 2022) to confirm that future development of the site subject to the rezoning being gazetted is able to meet the water quality requirements of State Environmental Planning Policy (Biodiversity and Conservation) 2021. The future development of the site is able achieve compliance with Chapter 6 Water catchments Section 6.6 Water quality and quantity as:

- The development would have a beneficial effect on the quality of water entering a waterway as the existing agricultural uses will cease, removing farm pollutants and animal manure pollutants. The water quality treatment proposed also exceeds required targets for the future development.
- The engineering plans and flood report have demonstrated that the future development will not increase the amount of stormwater run-off from a site,
- The development will can accommodate required on-site stormwater retention.
- The future development of the site will enhance water quality. As such, there are no additional cumulative environmental impacts of the development on the regulated catchment,
- The future development will not impact the level and quality of the water table is able make adequate provision to protect the quality and quantity of ground water.

The site will be treated for pollutants using 200-micron pit baskets (Oceanguard or approved equivalent), 2x690mm Stormfilter cartridges as end of line treatment for the childcare centre, and a bio retention basin as the end of line treatment for the subdivision. Due to site constraints, it is proposed to locate the bio retention basin in the adjacent property (170 Russell Street) within a 10m wide easement. The bio retention basin has been sized to achieve the following pollutant reduction targets as per Penrith City Council engineering guidelines. See table 1 below.

Table 1: Penrith City Council WSUD Pollutant Reduction Targets

Pollutant	Reduction Target (%)
Gross Pollutants (GP)	90
Total Suspended Solids (TSS)	85
Total Phosphorus (TP)	60
Total Nitrogen (TN)	45

The required bio retention basin area to achieve the above pollutant reduction target is 150 m². See figure 1 below for an excerpt of the MUSIC model demonstrating compliance with the pollutant reduction targets using the proposed design. See figure 2 for an excerpt of the input data for the bio retention system.

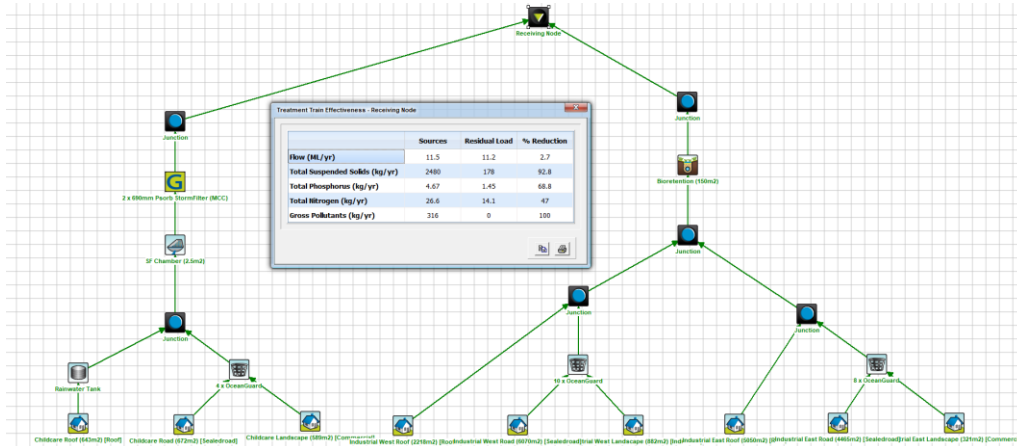
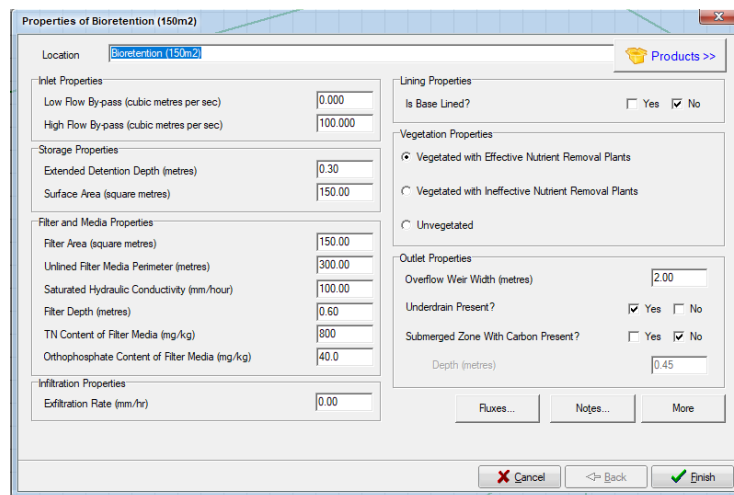


Figure 1 – MUSIC model excerpt (run state, demonstrating compliance with WSUD guidelines)



Properties of Bioretention (150m2)

Location: Bioretention (150m2)

Inlet Properties

Low Flow By-pass (cubic metres per sec): 0.000

High Flow By-pass (cubic metres per sec): 100.000

Storage Properties

Extended Detention Depth (metres): 0.30

Surface Area (square metres): 150.00

Filter and Media Properties

Filter Area (square metres): 150.00

Unlined Filter Media Perimeter (metres): 300.00

Saturated Hydraulic Conductivity (mm/hour): 100.00

Filter Depth (metres): 0.60

TN Content of Filter Media (mg/kg): 800

Orthophosphate Content of Filter Media (mg/kg): 40.0

Infiltration Properties

Exfiltration Rate (mm/hr): 0.00

Lining Properties

Is Base Lined? ☐ Yes ☒ No

Vegetation Properties

☒ Vegetated with Effective Nutrient Removal Plants

☐ Vegetated with Ineffective Nutrient Removal Plants

☐ Unvegetated

Outlet Properties

Overflow Weir Width (metres): 2.00

Underdrain Present? ☒ Yes ☐ No

Submerged Zone With Carbon Present? ☐ Yes ☒ No

Depth (metres): 0.45

Buttons: Fluses..., Notes..., More, Cancel, Back, Finish

Figure 2 – MUSIC model bioretention basin input data

I am an appropriately qualified and competent person in this area and as such can certify that the content of this letter complies with the above-mentioned criteria.

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Yours Faithfully,
Matthew Mishevski
Matthew Mishevski
 Senior Civil Engineer
 For and on behalf of,
Epicentre Consulting Engineers Pty Ltd