Memo 001 – MGS Eastern Playground Space MUSIC model

1.1 MUSIC model inputs

This memo details the input parameters and results from the MUSIC model prepared by TTW to support the Town Planning Submission for the proposed Eastern Playground Space at Mentone Grammar School, Mentone.

To inform the effectiveness of the proposed stormwater treatment measures and to demonstrate compliance to the Best Practice Environmental Management Guidelines (BPEMG), a MUSIC model has been developed in accordance with Section 6 of the City of Kingston 'Civil Design Requirements for Developers – Part A: Integrated Stormwater Management' dated September 2018. Refer to Table 1 below describing the input parameters.

Table 1 – MUSIC model input parameters

Parameter	Input used in model
MUSIC model software	Version 6.3.0
Model type	Stormwater treatment
Rainfall reference station	Melbourne City (MAR 650-750mm)
Timestep	6 minute

Design assumptions used in the development of the model include:

- The subject site consists of predominantly Silty Sand pending Geotechnical Investigations. Based on the adjoining project at Mentone Grammar Bayview, it is anticipated that the soil composition will likely be similar.

Your Partner in Engineering

1.2 MUSIC model results

Refer to Appendix A for MUSIC model output detailing catchment areas and proposed stormwater treatment measures used in the model. Table 2 below provides a summary of the MUSIC model results.

Table 2 – MUSIC model output summary

Parameter	Sources	Residual Load	% Reduction	BPEMG Target % Reduction
Flow (ML/yr)	1.52	0.969	36.2	N/A
Total Suspended Solids (kg/yr)	214	15.3	92.8	80
Total Phosphorus (kg/yr)	0.446	0.133	70.2	45
Total Nitrogen (kg/yr)	3.15	1.06	66.4	45
Gross Pollutants (kg/yr)	54.5	0	100	70

Yours faithfully,
TTW (VIC) PTY LTD

Michel Chan
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TTW Structural
Civil
Traffic
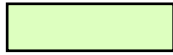Façade

Appendix A

LEGEND

A TOTAL = 950 SQM, C =0.52
A PAVED = 350 SQM
A LANDSCAPE = 600 SQM

A TOTAL = 2844 SQM, C =0.55
A PAVED = 1187 SQM
A LANDSCAPE = 600 SQM

A TOTAL = 1013 SQM, C =0.90
A PAVED = 1013 SQM

Area A San Fran Terrace (A = 0.095ha) [Mixed]

AREA A

Rain garden

Area C (0.101ha) [Mixed]

AREA C

Area B (0.28ha) [Mixed]

Rain garden

Bio-retention Swale

LPOD

Treatment Train Effectiveness - LPOD

	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.52	0.969	36.2
Total Suspended Solids (kg/yr)	214	15.3	92.8
Total Phosphorus (kg/yr)	0.446	0.133	70.2
Total Nitrogen (kg/yr)	3.15	1.06	66.4
Gross Pollutants (kg/yr)	54.5	0	100