

MEMORANDUM

T 02 9439 2633

F 02 9438 4505

Level 2, 60 Pacific Highway
PO Box 151
St Leonards NSW 1590

To	John Toth – Mott MacDonald	Date	25/07/12
From	Sean Reilly – Mott MacDonald	Total Pages	1
Regarding	Paling Court – MUSIC Model Results		

A model was set up using the MUSIC software package to evaluate the effectiveness of the proposed water quality treatment system at the Paling Court RACF, Camden. The site is proposed to have a bioswale which treats the majority of the runoff from the road and carpark area with the roof area bypassing the swale and connecting directly to the road stormwater drainage system. The reduction requirements for water quality from Camden Council are as follows:

- Gross Pollutants - 90% reduction
- Total Suspended Solids - 85% reduction
- Total Phosphorus - 65% reduction
- Total Nitrogen – 45% reduction

MUSIC Model

The post developed site was modelled as a single urban catchment node, with the area draining to the bioswale. A bioswale is to be located along the central open area of the site capturing runoff from the road area. The proposed location is as shown on drawing No. MMD-304720-C-DR-DA-03. An area of 0.265ha was calculated as being directed to the bioswale from the road areas with an impervious percentage of 100%.

From the proposed layout a bioswale of 40m long and 1m wide is proposed on the site, which gives a surface area for infiltration in the bioswale of 40m². A detail of the proposed bioswale is shown on drawing No. MMD-304720-C-DR-DA-05.

The MUSIC model was run to compare the post development pollutant loads without treatment compared with the post development pollutant loads with treatment. The results are shown in the below Table.

MUSIC Output – Post Developed Reduction in Annual Loads

Parameter	Post Developed Load	Post Developed Load After Treatment	% Removal Achieved
Total Suspended Solids (kg/yr)	406	4.34	98.9%
Total Phosphorus (kg/yr)	0.797	0.183	77.1%
Total Nitrogen (kg/yr)	5.50	1.19	78.3%
Gross Pollutants (kg/yr)	60.6	0.00	100.0%

As can be seen from the removal percentages achieved these results show that it achieves council pollutant reduction requirements.