Raingarden Standard Cross-section C120.11 and Flushing Point

GENERAL

DESIGN STATEMENT

Water Sensitive Urban Design (WSUD) is an approach to improve sustainable use of water in the urban environment.

Raingardens rely upon specific filter media and layer depths to function correctly. Raingarden cross-sections and filter media must comply with this standard.

Moreland City Council Streetscape WSUD Raingarden and Tree Pit Design Package (WSUD Package) provides a suite of design elements, applications and standard drawings to assist WSUD site-specific design.

APPLICABLE LOCATION

As specified by Council.

COUNCIL STANDARD DRAWING

N/A

CROSS REFERENCE DOCUMENT

- Moreland WSUD Design Package

STANDARD SPECIFICATION

Refer to WSUD Package, Section 4. Autocad Library:

- Raingarden Standard Cross-section and Flushing Point - Drawing SK012

SUPPLIER

Refer to WSUD Package, Section 10. List of Supplier.

MAINTENANCE

Refer to WSUD Package, Section 8. Maintenance Checklist.

GENERAL NOTES

Refer to WSUD package for types and specification.

FILTER MEDIA COMPONENT NOTES:

F1. ALL FILTER MEDIA USED FOR THE WORKS IS TO BE APPROPRIATELY TESTED IN ACCORDANCE WITH THE FOLLOWING NOTES AND A COPY OF RESULTS SENT TO THE PROJECT SUPERINTENDENT PRIOR TO THE MATERIAL BEING PLACED ON SITE.

F2. FILTER MEDIA SHALL HAVE A SATURATED HYDRAULIC CONDUCTIVITY IN THE RANGE OF 250-350 mm/h UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT. SATURATED HYDRAULIC CONDUCTIVITY OF POTENTIAL FILTER MEDIA SHOULD BE MEASURED USING THE ASTM F1815-06 METHOD.

F3 FILTER EDIA, WHICH COMPLY WITH THE PARTICLE SIZE GRADING OUTLINED BELOW, WILL GENERALLY MEET SATURATED HYDRAULIC CONDUCTIVITY SPECIFICATIONS.

DESCRIPTION	PROPORTION	GRADING
CLAY & SILT	< 3 %	< 0.05 mm
VERY FINE SAND	5 - 10 %	0.05 - 0.15 mm
FINE SAND	10 - 25 %	0.15 - 0.25 mm
MEDIUM TO COARSE SAND	60 - 70 %	0.25 - 1.0 mm
COARSE SAND	7 - 10 %	1.0 - 2.0 mm
FINE GRAVEL	< 3 %	2.0 - 3.4 mm

F4 THE FILTER MEDIA SHOULD BE WELL-GRADED i.e., IT SHOULD HAVE ALL PARTICLE SIZE RANGES PRESENT FROM THE 0.075 mm TO THE 4.75 mm SIEVE (AS DEFINED BY AS1289.3.6.1 - 1995). THERE SHOULD BE NO GAP IN THE PARTICLE SIZE GRADING, AND THE COMPOSITION SHOULD NOT BE DOMINATED BY A SMALL PARTICLE SIZE RANGE.

F5. FILTER MEDIA THAT DO NOT MEET THE FOLLOWING ADAPTED AS4419 - 2003 - SOILS FOR LANDSCAPING AND GARDEN USE SPECIFICATION SHOULD BE REJECTED:

a. ORGANIC MATTER CONTENT - LESS THAN 5% (w/w). AN ORGANIC CONTENT HIGHER THAN 5% IS LIKELY TO RESULT IN LEACHING OF NUTRIENTS.
b. pH- AS SPECIFIED FOR "NATURAL SOILS AND BLENDS" 5.5 -7.5 (pH 1:5 IN WATER).
c. ELECTRICAL CONDUCTIVITY (EC) - AS SPECIFIED FOR NATURAL SOILS AND SOIL BLENDS < 1.2 dS/m.
d. PHOSPHORUS - < 100 mg/kg. SOILS WITH PHOSPHORUS CONCENTRATIONS > 100 mg/kg SHOULD BE TESTED FOR POTENTIAL LEACHING.

F6. POTENTIAL FILTER MEDIA SHOULD GENERALLY BE ASSESSED BY A HORTICULTURALIST TO ENSURE THAT THEY ARE CAPABLE OF SUPPORTING A HEALTHY VEGETATION COMMUNITY. THIS ASSESSMENT SHOULD TAKE INTO CONSIDERATION DELIVERY OF NUTRIENTS TO THE SYSTEM BY STORMWATER.

F10. THE TRANSITION LAYER SHALL CONSIST OF WASHED SAND WITH 90% PARTICLES RETAINED ABOVE 0.25mm THE HYDRAULIC CONDUCTIVITY OF THE TRANSITION LAYER IS TO BE NO LESS THAN 450mm/hr.

F12. THE DRAINAGE LAYER SHALL BE COMPOSED OF CLEAN STONE WITH ALL PARTICLES BETWEEN 4.0mm AND 7.0mm IN SIZE.

F13. SCORIA OR QUARTZ ARE NOT SUITABLE MATERIAL FOR USE AS A DRAINAGE LAYER.

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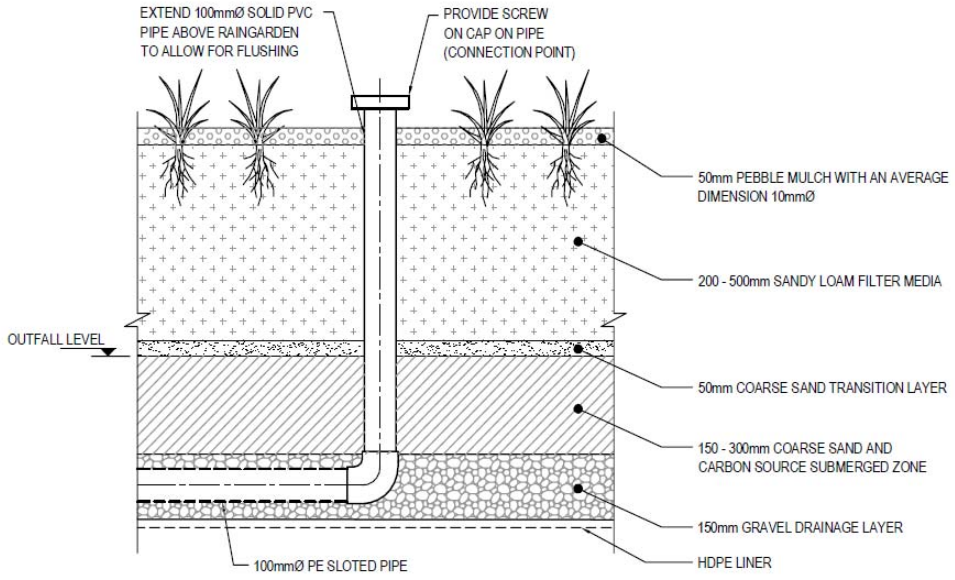
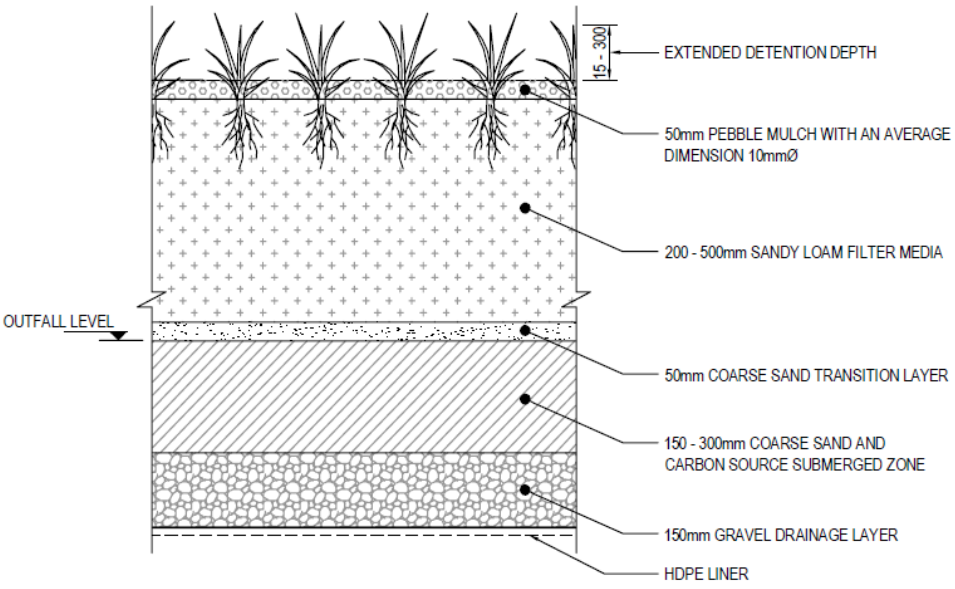


FLUSHING POINT DETAIL



STANDARD CROSS SECTION (SUBMERGED)