

WSUD – Raingarden Soil and Layers C120.05



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DESIGN STATEMENT

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

LAYERS

Raingardens throughout Merri-Bek do not require a mulch layer as organic mulches pose a high risk of blocking outlets. Gravel mulches can limit plants from spreading and can kill tubestock by overheating during hot weather and can make de-silting more difficult.

Most raingardens will be comprised of the following four layers:

- Filter layer: washed well-graded sand, particle size diameter 0.05-3.4mm with hydraulic conductivity of 100-300mm/hr and low nutrient content Total Nitrogen <1,000mg/Kg and available phosphate <80mg/Kg
- Transition Layer: well-graded coarse sand containing <2% fines, for example A2 filter sand
- Drainage Layer: fine gravel, for example 2-7mm washed screenings (not scoria)
- Submerged Zone: sand or fine aggregate mixed with 5% by volume low nutrient carbon source, for example 6-10mm hard wood chips, pine chips without bark, sugar cane mulch, pine saw dust.

APPLICABLE LOCATIONS

All raingardens in Merri-Bek municipality.

CROSS-REFERENCE SPECIFICATIONS

- Council technotes C120.01 to C120.07
- Melbourne Water Biofiltration Systems in Development Services Schemes Guidelines (2020).

SUPPLIERS

Engaging with experienced soil suppliers for raingarden media (e.g., Burdett's or Daisy's Garden Supplies) will ensure correct filter media is used and that costly replacement of media is not required.

¹ <http://raingardenalliance.org/right/soil>

² <https://www.aces.edu/blog/topics/landscaping/rain-gardens/>

TESTING REQUIREMENTS

Before installing the filter media, it must be tested in accordance with Appendix C, Adoption Guidelines for Biofiltration Systems (CRC for Water Sensitive Cities, 2015) to confirm it has a suitable hydraulic conductivity, can support plant growth and hold adequate moisture. Testing must be carried out by a NATA accredited laboratory. If the media does not meet these requirements, it must not be installed. Hydraulic conductivity of filter media should be between 250-350 mm/h. Infiltration testing every five years after establishment is then recommended to confirm the system's effectiveness.

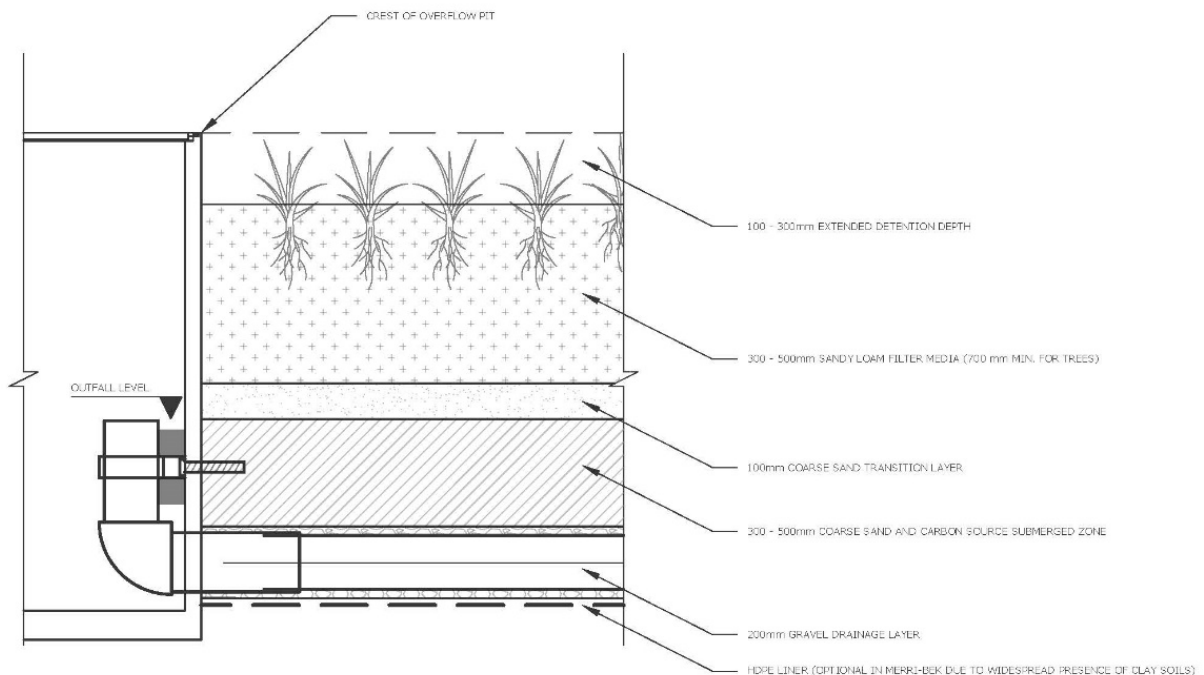
CONSTRUCTION SUPERVISION

The contractor must supply test results and a sample bag for approval. Soil filter media delivered to site must be inspected and approved by Council representative prior to installation.

C120.05 WSUD – Raingarden Soil and Layers

C120.05 RAINGARDEN SOIL AND LAYERS CROSS SECTION

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NOTE: THE STANDARD DETAILS SHOWN ON THIS DRAWING ARE TYPICAL ONLY. THESE DETAILS MAY NEED TO BE RECONFIGURED TO SUIT SITE SPECIFIC CONDITIONS.