

Raingarden design for Melbourne's west

This document provides a guide to improve the performance of bioretention systems in Melbourne's north and west. Following these recommendations will reduce the risk of plants dying in the drier climate.

Recommended design

Figure 1 - Raingarden standard system with filter media depth of 500mm

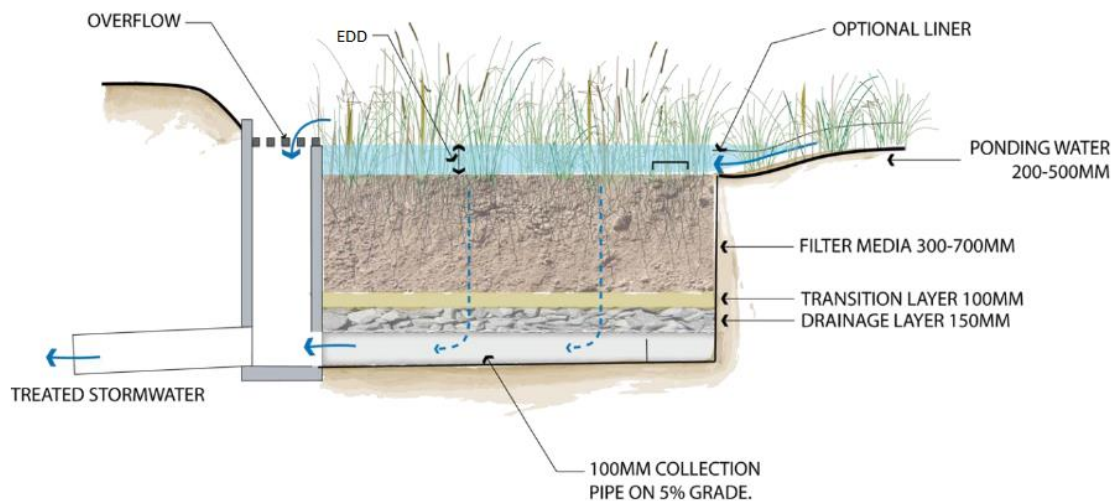
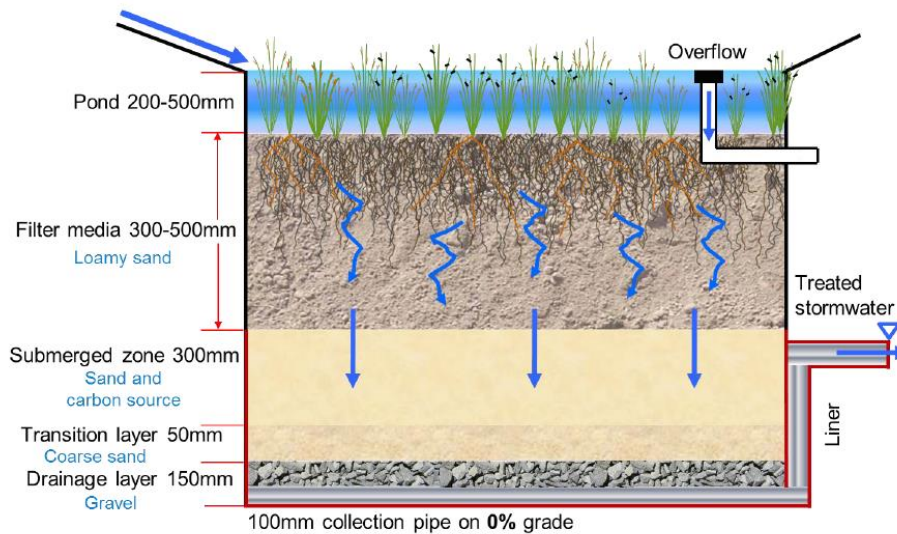


Figure 2 - Raingarden with a submerged zone and filter media depth of 500mm



Acceptable raingarden design

- standard system with 300-500mm filter media depth
- including a submerged zone system and 300mm filter depth
- including properly sized upstream sedimentation basin
- standard system with filter media depth of 500mm where surrounding soil has a high infiltration rate

Avoid

- standard raingardens with filter media depth less than 300mm
- raingardens downstream of a wetland or an oversized sedimentation basin

Note: All systems should be designed as per Adoption Guidelines for Stormwater Biofiltration Systems (FAWB, 2009).

Plant selection

This should be guided by expert opinion, based on the particular project conditions. The plant species that are commonly used in raingardens can be grouped into three general categories:

Category	Example plant species
Tolerant of both wet and dry conditions once established	<i>Carex appressa</i> (tall sedge)
Tolerant of dry conditions once established	<i>Ficinia nodosa</i> <i>Lomandra longifolia</i> <i>Juncus amibilis</i>
Prefer more constant conditions without wet/dry extremes	<i>Goodenia ovate</i> <i>Juncus flavidis</i>

Note: Other plant species may be appropriate for a particular system and these should be guided by expert opinion.

At least 50% of the plants chosen for a bioretention system should have the following characteristics for effective nutrient removal (FAWB, 2009):

- high root density
- extensive fibrous root systems (no bulbs)
- vigorous growth
- tolerant of freely draining soils
- drought and inundation tolerant