

Bio-retention basins

About bio-retention basins

Bio-retention basins are areas that temporarily hold and filter stormwater runoff before it enters creeks and waterways.

Bio-retention basins are used in urban areas, where rain washes pollutants off hard surfaces such as houses and roads and into stormwater drainage systems.

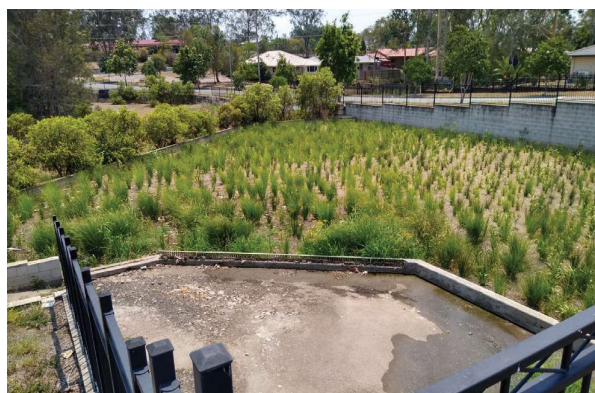
First, the water enters a vegetated area that has been planted with species such as native trees and grasses such as sedges. This slows the water and traps pollutants. Some pollutants, such as nitrogen, are harmful to waterways but can be beneficial for plants.

Then the water filters down through a 'filter media' layer such as sandy loam. This fine filtration also traps pollutants as the water passes through.

Finally, the water collects in perforated drainage and flows to downstream creeks and waterways.

Benefits to bio-retention basins include:

- filtering pollutants out of stormwater before it enters creeks and waterways
- slowing the velocity of water which helps reduce erosion of downstream creek banks
- habitat for native wildlife such as frogs and other species
- low maintenance plantings with system essentially 'self-watering'.



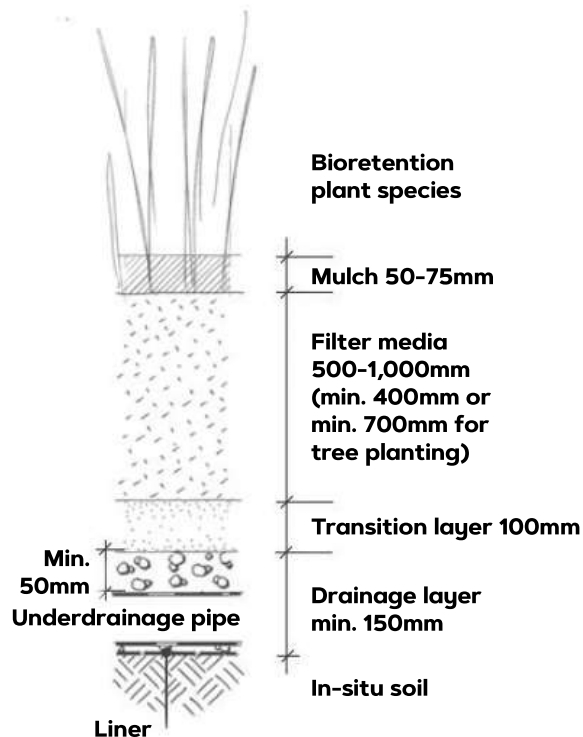
Refurbishment is important

Bio-retention basins need maintenance such as the removal of debris and accumulated sediment.

After a number of years it may be necessary to do a refurbishment to ensure the system functions properly. This can involve removing the surface filter media and the accumulated sediment, replacing surface filter media and replanting the basin.

Other checks can be done for potential issues such as erosion, blockage of pipes, overflow pits and weirs, and structural integrity of embankments and retaining walls.

Bio-retention basins are often within public areas such as open space or within streets so it is important to provide landscape design that complements the surrounding area.



Bioretention Technical Design Guidelines,
waterbydesign.com.au