

BOX PLANTERS



DESCRIPTION

Box planters are similar to rain gardens as they use vegetation and amended soils to filter and retain stormwater. A planter typically consists of a concrete box, which may or may not have a lined or concrete bottom (depending if infiltration is desirable), filled with a soil medium and planted with trees, shrubs, or flowering species.

BOX PLANTERS MAY BE DESIGNED AS:

- Contained planters with outlet through overflow
- Flow through planters with an underdrain outlet, or
- Infiltration planters that drain through deep infiltration and groundwater recharge

APPLICATION

Box planters are often designed for highly urbanized areas and retrofits where impervious surface reduction or stormwater quality enhancements are required. Runoff from surrounding impervious surfaces is directed into raised or inset box planter facilities to provide source control treatment, allow for a small amount of retention within the growing media, and, depending on subsoil types, facilitate deep infiltration.



Some of the water is retained by the soil and subsequently used by the vegetation and released through evapo-transpiration. Depending on the native soils, infiltrated

water will percolate (deep infiltration) into the groundwater table. If infiltration is not an option, a perforated underdrain placed near the bottom of the box planter will convey excess water to the storm drainage system or a reservoir for re-use purposes (such as irrigation). Contained and flow through box planters require downstream stormwater facilities or connection to a conventional storm sewer system to convey excess stormwater.

CONSIDERATIONS

- Locate facilities appropriately to minimize damage due to pollutants and de-icing and anti-skid materials
- Provide an impermeable barrier between an infiltrating box planter and any roadway or adjacent building to prevent heaving or foundation damage
- Select salt tolerant species to be planted nearest the road runoff inlets to buffer more sensitive species from the impacts of salt

FUNCTIONS/BENEFITS

- Integrate trees and stormwater management in ultra urban areas
- Improve water quality
- Reduce runoff volume and peak flows
- Storm runoff into the box planter becomes watering source for the plants and trees growing in it

MAINTENANCE

Facility inspections should be conducted quarterly during establishment (first 2 years) and semi-annually thereafter. Inspecting after a major storm event will facilitate early detection of erosion or debris blockages occurring during elevated or sustained flows.

- Control weed
- Inspect downspout and splash block for clogging, leaks, and erosion
- Repair soils at locations where infiltration compromised
- Remove litter and debris from vegetation, inlet, and overflow
- Remove accumulated sediments