





# BIOSWALES & BIORETENTION CELLS



## WHAT ARE BIOSWALES & BIORETENTION CELLS?

Bioswales and bioretention cells are designed to improve water quality and divert rainwater from poorly drained areas. They are ideal for parking lots, roadsides, and other urban areas that have large expanses of pavement. They are typically implemented in areas where water can't freely percolate into the ground. Bioswales and bioretention cells are vegetated depressions that help move water into the soil. Above ground, they look like a garden; below ground, these techniques alleviate pressure on storm sewers. The gentle sloping design of bioswales and bioretention cells allows rainwater to drain slowly while the installed vegetation's root systems filter the pollutants from the water.

## BENEFITS OF BIOSWALES & BIORETENTION CELLS

-  Improve water quality by filtering stormwater
-  Reduce erosion by slowing water movement
-  Remedy the smell and mosquito problems associated with drainage ponds and ditches
-  Beautify conventionally boring settings such as parking lots

## EXAMPLES OF BIOSWALES & BIORETENTION CELLS



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# Installing Bioswales & Bioretention Cells



01

## Install Subdrain

Dig down about 36" and install a perforated subdrain. The drain tile ensures that water that can't be absorbed by the soil will be conveyed off site. To ensure that the swale or cell doesn't flood, connect an overflow pipe to the subdrain.



02

## Lay Down a Rock Layer

Lay down an 8" to 12" layer of washed rock. Then lay a 2" layer of thick, washed 1/8th chips.



03

## Modify & Replace Soil

Create a soil mixture of sand, topsoil, and compost. Rototill the soil to make sure it's aerated. Fill the trench with the modified soil and top with a 2" layer of mulch.



04

## Plant

Native plants are suggested for cells and swales, as they have deeper root systems that better tolerate wet conditions. Selecting water tolerant plants is important for a cell or swale. Aside from these considerations, landscapers can choose whatever plants suit their taste.



05

## Line with Edging

Creating a berm is important to help slow down water and prevent erosion. However, the berm should not prevent water from flowing into the cell or swale. Cutouts can help modulate water flow.



06

## Maintenance

Manage vegetation to maintain the visual appeal of the cell or swale. Replace mulch as needed. Inspect for erosion or standing water.

