

RAINSCAPING URBAN LANDSCAPES

IMPROVING COMMERCIAL, INSTITUTIONAL & INDUSTRIAL SITES



RUNOFF

STORM DRAIN

STORM SEWER

STREAM

Don't Just Landscape...Rainscape!

Runoff from most commercial sites rushes directly to storm sewers and then on to streams. As it flows off roofs and across parking lots it picks up pollutants such as sediment, hydrocarbons, heavy metals, salts and nutrients. Runoff from highly impervious sites is often hot, causing thermal pollution. Polluted stormwater goes directly to a stream without treatment. Retrofit existing landscapes with Rainscaping practices and design new developments with the practices featured in this brochure. By Rainscaping a site, the direct connection is eliminated. Polluted runoff is infiltrated, filtered, cooled and slowly released to improve water quality.

Rainscaping Practices

Many businesses, commercial sites, and corporate campuses have large impervious parking lots and landscaped areas. There are many Rainscaping practices that can be used to reduce maintenance costs while they capture, treat and reduce stormwater runoff.



Native Landscaping

Convert turf areas of your corporate campus or business to native prairie plants. The deep roots of native plants build and improve soil health that helps rainfall infiltrate into the soil. Use a variety of plants to provide seasonal color and habitat for butterflies and birds. Maintenance costs are significantly reduced compared to standard turf grass areas.



Native Turf

Use native turf on sunny lawn areas that are well drained. Native turf features a combination of low-growing native grasses that create a turf-like appearance. A blend of blue grama and buffalograss is most commonly used. The deep, fibrous root system of natives will help build and maintain soil quality. Once established, native turf requires less mowing, irrigation and no fertilizer, which creates significant cost savings.



Soil Quality Restoration

Healthy soil is the first step in preventing polluted runoff. With new development, valuable topsoil is removed and the remaining subsoil is compacted by heavy grading equipment and construction activity. Soil quality restoration begins with the decompaction of soils. Compost is added to further increase the soil's organic matter content, which helps a lawn absorb more rain. Established lawns are aerated and then top-dressed with compost and seed to improve soil quality.



Green Roof

Green roofs are used to capture rainfall on the rooftop. They can manage stormwater and reduce runoff. The roofing system consists of waterproof and filtering layers that are overlain by a growing soil media that is planted with vegetation. Some green roof systems can have vegetation such as trees and sitting areas, depending on the structural integrity of the roofing system.



Permeable Pavement

Install permeable to minimize impervious surfaces. Roads, parking lots and driveways account for more than 60 percent of impervious surfaces in urban areas and are the largest generators of stormwater runoff. Permeable pavement allows water to infiltrate into layers of rock placed below the porous pavement and then into surrounding soils or to a sub-drain.



Bioretention Cell

Use bioretention cells to treat runoff from streets, parking lots, driveways, or rooftops. They are used in areas where the soils are more poorly drained and rely on a rock chamber, sandy soil mix, and perforated tile subdrain to infiltrate and filter water. They are planted with flowering plants and grasses.



Vegetated Filter Boxes/Modular Cells

Tree boxes in parking lots or along roads are used to capture and treat runoff from impervious surfaces. They contain a sandy soil mix and a rock aggregate layer. They are often planted with trees, but can feature grasses and forbs. Modular cells are used beneath parking lots and sidewalks and use a framework that holds an engineered soil mix that supports traffic loads beneath paving. The soil within the cells supports large trees while reducing stormwater runoff.



Bioswale

Install bioswales instead of using underground storm sewer. A bioswale is a multi-purpose stormwater management practice. By using a permeable soil bed with check dams and a perforated subdrain tile, bioswales infiltrate stormwater from frequent small rains. During heavy rains, they convey runoff in a non-erosive manner over their vegetated surface. Bioswales can feature native grasses and flowers or turf grass.



Rainwater Harvesting

Collect rooftop water and use it for irrigation and toilet flushing. Harvesting rainwater is gaining in popularity. Large underground cisterns or above ground systems stored indoors can be used to capture large quantities of rainwater that is reused and results in significantly less runoff generated from your property. A 1,500-square-foot building sheds about 1,000 gallons per inch of rain.

Don't just landscape . . . **RAINSCAPE!**

Rainscaping creates beautiful landscapes that manage water sustainably. It includes the installation of stormwater management practices that result in the improvement and protection of water resources in urban areas.

You can help prevent pollutants from reaching storm drains and streams by incorporating rainscaping practices into your landscape. Create beautiful and functional rainscapes that reduce runoff and improve water quality. So don't just landscape—Rainscape.

Take me to the Cedar Rapids Library Roof! This city building is Rainscaped. Your facility could be, too!

1. A green roof soaks up rainfall, reducing stormwater runoff. It also has energy efficiency benefits especially during hot summer months.
2. Two large cisterns are used to harvest rainfall from the rooftop. This water is used to irrigate green roof plants during periods of hot and dry weather in the summer.
3. Permeable paver sidewalks and a pervious concrete parking lot allows stormwater runoff to soak through these pavements to an underground rock layer that treats the stormwater.



1 Green Roof



2 Rainwater Harvesting



3 Permeable Pavers



rainscapingiowa.org



iowaagriculture.gov



iowastormwater.org



polk-swcd.org



United States Department of Agriculture
Natural Resources Conservation Service
ia.nrcs.usda.gov



Low-interest loans available

The State Revolving Fund provides low-interest loans (3 percent) to implement sustainable stormwater management practices. Loans can be made to developers, municipalities, businesses and homeowners. Visit www.iowasrf.com and click on "Topics" - "Stormwater" for more details.