

Low Impact Development Practice: *Rain Gardens*

Williston Town Office Rain Garden Installation



Rain garden during construction in 2009



This 120 sq. ft. rain garden captures and treats stormwater runoff from the Town Annex parking lot. It is also designed to serve as an educational demonstration project

Location

Williston Town Office, Williston, VT

Applicable Land Use

Civic/Public, Residential, Commercial

Problem

Surface runoff from paved parking lot reduced groundwater recharge and contributed to erosion, siltation, and water pollution. Such effects can translate into human health risk, ecosystem disturbance and aesthetic impact to water resources. The Allen Brook watershed, which begins in Williston and feeds into the Winooski River, is considered stormwater impaired by the State due to the amount of stormwater runoff and pollutants.

Description

A rain garden is a bowl-shaped garden that is used to treat stormwater runoff, usually from a roof, parking lot, or other impervious surface. The garden is planted in an excavated shallow depression (usually 4-8" deep) that is strategically located to collect storm runoff.

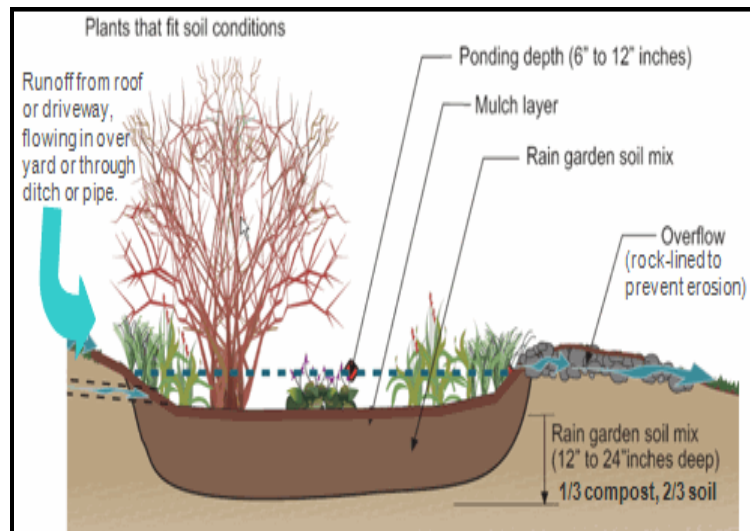


Diagram of a typical rain garden cross-section

https://rainwise.seattle.gov/city/seattle/solution_brochures/rain_garden_roof



Lamoille County Planning Commission
PO Box 1637 · Morrisville, VT 05661
www.lpcvt.org · (802) 888-4548



Low Impact Development Practice: Rain Gardens

Additional Examples



Smugglers Notch Resort demonstration rain garden in Jeffersonville was constructed in 2007. This rain garden captures runoff from two paved surfaces and is a part of a 'Where Does the Water Go?' tour of the Resort's stormwater management sites.



The Dorothy Alling Memorial Library rain garden in Williston was created in 2006. The garden is shaped to collect rainwater and snowmelt from the roof-reducing the amount of stormwater in the Allen Brook while providing beautiful landscaping for the community.

Benefits

During a rain event, the garden will temporarily fill with water which slowly infiltrates back into the soil within a few hours. Stormwater captured by a rain garden soaks into the ground and recharges the groundwater at a rate 30% greater than that of a typical lawn. In this way, most of the stormwater is returned to the groundwater supply, instead of running over the land and directly into stormdrains, streams, and lakes. Rain gardens also help prevent pollutants from reaching streams, since toxins in runoff often adhere to soil particles in the garden, or are taken up by plants.

Maintenance

Regular watering and weeding during plant establishment (1-2yrs). After establishment requires periodic weeding and debris removal.

Project Specifics

Timeline: Installed by volunteers in 2009

Project Contact: Winooski Natural Resources Conservation District

Water Quality Best Management Practices

| Structural: | Used: | Non-Structural: | Used: |
|--------------------------------|-------|--------------------------------|-------|
| Bioretention or Rain Garden | X | Conservation Design | |
| Infiltration Basin | | Cluster Development | |
| Infiltration Trench or Gallery | | Open Space Preservation | |
| Dry Well | | Preserve Natural Areas | |
| Constructed Wetland | | Shared Driveway | |
| Vegetated Swales | | Minimize Pavement Widths | |
| Tree Boxes/Planters | | Minimize Setbacks & Frontage | |
| Rain Barrels/Cisterns | | Disconnect Impervious Surfaces | |
| Porous Pavement | | Soil Restoration | |
| Green Roof | | Riparian Buffer/Filter Strip | |

Resources

- The Vermont Rain Garden Manual "Gardening to Absorb the Storm" - www.vacd.org/~winooski/winooski_raingarden.shtml
- VT DEC - Small Sites Guide for Stormwater Management - www.anr.state.vt.us/dec/waterq/stormwater/htm/sw_LID.htm

This resource is part of an effort to increase awareness of Low Impact Development. It was funded by the Vermont Department of Environmental Conservation using funds from the American Recovery and Reinvestment Act of 2009, the Vermont Agency of Commerce and Community Development, and the member municipalities of the Lamoille County Planning Commission.