

Mount Pleasant Borough – Residential Rain Gardens

Design features: 20 rain gardens

Date of Installation: 2010-2014

Location: Ramsay Terrace neighborhood,
Mount Pleasant Borough, Westmoreland County PA

Client: Mount Pleasant Borough, Residents of
Mount Pleasant Borough

Installation Cost: \$88,000, PA DEP Growing
Greener / EPA 319 grant funding

Partners: Westmoreland Conservation District,
Borough of Mount Pleasant, Residents of
Mount Pleasant Borough

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A residential rain garden can be integrated into a landscape to capture and treat roof runoff.

Project Description

This project is a stormwater management retrofit to capture and treat stormwater from a residential neighborhood. The Ramsay Terrace neighborhood was constructed in the 1960s with little thought for stormwater management and has a history of flooding problems and sanitary sewer backups. Of the 189 homes that were targeted, 20 rain gardens were constructed as a demonstration to reduce runoff in the neighborhood and to improve the water quality benefits to Shupe Run, a tributary to the Jacobs Creek Watershed.

Benefits/Performance Measures

Impervious area managed: Average 1,000 square feet of roof per home

Stormwater reduction performance analysis:

Runoff from a 2" storm event on existing rooftops of impervious area is fully managed by twenty 100 sq ft to 200 sq ft rain gardens which capture approximately 3,340 cu/ft total runoff in a flood prone neighborhood.

Community and economic benefits that have

resulted from the project: Each rain garden provides catchment for debris and pollutants, provides cooling for heated runoff, and provides volume reduction and water quality improvements to the Jacobs Creek Watershed in an area where little currently exists.

Related information: The project included excavation, installation of rain garden with engineered soil mix, underdrain system, landscaping and some downspout relocation work.

Recommended Maintenance

Link to maintenance guidelines for similar projects

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Additional Information



A residential rain garden can be integrated into an existing landscape, but should be at least ten feet from a building foundation



After verifying no utilities are in the way, a rain garden is excavated three to four feet deep to allow for an underdrain and soil mix layers as well as surface ponding depth.

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An underdrain layer is separated from the soil mix with a geotextile, and a pipe riser extends up to capture excess runoff from large storms.



A landscaped rain garden includes versatile plants and a mulch layer to reduce weeds.

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A mature rain garden provides seasonal interest in the landscape.