

Before Rain Garden



After Construction



## Demonstration Rain Garden



UC Department of the Environment  
17 Pearl Street

### What is a Rain Garden?

Rain gardens are a stormwater management practice intended to manage and treat small volumes of stormwater runoff from impervious surfaces. Rain gardens are depressed garden beds filled with a variety of native perennials and shrubs that are both water and drought tolerant. They act as simplified versions of bioretention areas and are designed as a passive filter system.

### How does a Rain Garden Work?

Rainwater is directed into the garden from residential roof drains, driveways, and other hard surfaces. Rain gardens slowly release runoff into the ground rather than allowing it to flow into the stormwater system. The runoff temporarily ponds in the garden and seeps into the soil over a day or two. The system consists of an inflow component, a shallow ponding area over a planted soil bed, mulch layer, gravel filter chamber, attractive shrubs, grasses, and flowers, and an overflow mechanism to convey larger rain events to the storm drain system.



*Drain pipes coming  
from roof, entering  
garden area*

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Michael P. Hein, County Executive



## Benefits of a Rain Garden

Rain gardens have many benefits when applied in urban settings. Most notably, rain gardens can help to:

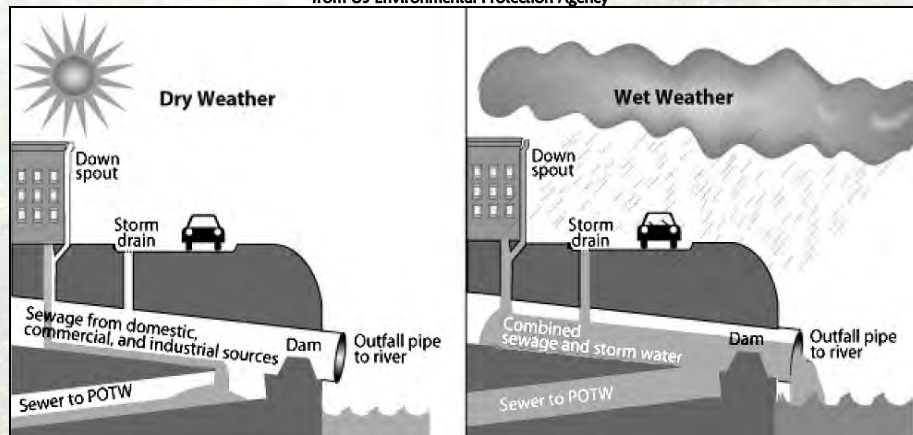
- Keep pollutants (solids, metals, nutrients, and hydrocarbons) from entering waterways
- Protect rivers and streams from erosion
- Recharge local groundwater resources
- Provide habitat for beneficial insects, birds, and other wildlife
- Enhance the landscape versus turfgrass or hard urban surfaces
- Promote watershed education and stewardship

## Additional Benefits in Older, Urban Areas

A rain garden in an older city, such as Kingston, has an added benefit; it keeps water out of the municipal sanitary sewage system during a rain event. In many older cities, portions of their stormwater and sanitary sewer systems are combined- both stormwater and sanitary flows into the sewage treatment plant. This works well during fair weather. However, during moderate and larger storms the excess water overburdens the system causing sewage and stormwater to mix and overflow untreated into nearby water bodies. In Kingston, this means that untreated wastewater can be discharged to the Rondout Creek during storms. Raingardens help to keep water from entering the municipal sewage system and result in less untreated waste water being discharged to water bodies during storm events.

## Combined Sewer Overflow (CSO)

from US Environmental Protection Agency



## Specifics of Our Rain Garden

- Designed by Barbara Restaino, Restaino Design Landscape Architects, PC through the Hudson Valley Regional Council Green Infrastructure Planning Project 2010-2011 \*
- Currently handles runoff from almost 1000 sq. ft. of roof, can be expanded to include greater drainage area
- Garden is approx. 300 sq. ft.
- Construction by Ulster County Department of Public Works
  - Area was dug down 24"; 6" gravel base was installed; 12" of native soil was put back in; roof downspouts were redirected into garden area; overflow drain pipes installed but not hooked up
- Plants were provided by Friends of Forsyth Park and Cornell Cooperative Extension of Ulster County

## Plant List

### Perennials

Blue milkweed	Helen's flower
Swamp milkweed	Blue flag iris
New England aster	Gayfeather
White wild indigo	Cardinal flower
Pink turtlehead	Eastern beebalm
Tickseed	Mountain mint
Purple coneflower	Sweet coneflower
Joe-pye weed	Dwarf ironweed

### Shrubs and Grasses

New Jersey tea  
Summersweet  
Prairie dropseed

*This garden is designed to serve as a demonstration site. The building, currently used as office space for the UC Department of the Environment, is actually an older home not atypical of Kingston. The area where the garden is located is used as an outdoor lunch site and is adjacent to a pedestrian walkway and the Ulster County Office Building. We hope this project creates interest in the many benefits of rain gardens to the community.*

**Please visit us at 17 Pearl Street if you have any questions or would like additional information.**

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