



# rainscaping

PURDUE RAINSCAPING EDUCATION PROGRAM

# Installation and Maintenance



## Learning Objectives

After this session, you will be able to:

- Apply a rain garden design to a site
- Install the proper drainage to effectively channel water to a rain garden
- Prepare a site for planting, including shaping and preparing the soil
- Follow best maintenance practices for rain gardens
- Consider how you will use the information you learned in this training

## Installation and Maintenance

# Installation

## The Installation Process

- Lay out garden
- Kill or remove grass
- Dig and shape the garden
- Construct inlet and outlet
- Plant
- Mulch





## Laying Out Your Garden

- Test layout by using:
  - String
  - Hose
  - Spray paint
- Manipulate the shape (kidney, dog bone, etc.) to get what you want
- Incorporate shape into existing landscaping





## Plan Ahead

- Talk with people who will maintain the garden
- Figure out if you need to rent or purchase equipment (sod cutter, tarp, shovels)
- Contact JULIE to mark underground utilities
- Schedule compost and plant delivery for appropriate dates
- Consider whether you need a rototiller to loosen up the garden bed





## Dig and Shape the Garden

Your goals:

- A wide, flat-bottomed area in the middle
- Gently sloping sides







## Dig and Shape the Garden

Consider:

- The garden's depth
- Whether the soil needs compost (requires digging 3-4 inches deeper)
- Whether you need to dig beyond any compaction zone in the soil
- Whether you need to build a berm or retaining wall if the garden is on a slope





## Dig and Shape the Garden

Understand how  
water flows in and out  
of the garden

Ensure overflow does  
not flood another  
area







## Three Final Installation Steps

### 1. Check infiltration

- Fill the rain garden with water
  - Best after a rain, otherwise you must repeat
- Make sure it empties within 24 hours
- If not, work the soil or add more compost



## Three Final Installation Steps

### 2. Mulch

- Create a plan to minimize soil compaction
- Use coarse, double-shredded hardwood mulch
- Apply a 3-inch layer, except around plant stems





## Three Final Installation Steps

### 3. Plant

- Set plants out in a grid or blocks (measuring tape may be helpful)
- Loosen plant plug roots before you plant
- Water





## Installation and Maintenance

# Maintenance



## Maintenance

- Ensure someone champions the maintenance
- First year: Water 1 inch per week
- Second year: Water only during extreme dry periods
- Remove weeds regularly
- Remove trash and debris
- Remove dead stems and flower heads in fall or spring
- Routinely check inlets and outlets to ensure good flow



## Develop a Maintenance Plan

- Record contact information and roles
- Describe the general maintenance required, maintenance schedule, and who is responsible
  - Include where mowing will occur, watering and weeding schedules, mulch type and how much
- Include a plant design map for reference
- Include plant list (if replacement is required)
- Describe winter maintenance (plowing, salting)
- Plan for shift in leadership for public spaces

Installation and Maintenance

# Common Concerns About Rain Gardens

## Common Concerns About Rain Gardens

### **Will my garden be a mosquito breeding ground?**

- No
  - Mosquito larvae require 3-7 days to develop into flying adults
  - Rain gardens are designed to infiltrate water within a day
- Even if it takes 48 hours to completely drain, there is not enough time for a mosquito to develop





## Common Concerns About Rain Gardens

### **Could children drown in the standing water?**

- Gardens are shallow and designed to hold water for only a few hours
- Locate rain gardens where safety is not a concern.
- You can amend soil to increase the infiltration rate and decrease the holding time of standing water



## Common Concerns About Rain Gardens

### **Will a rain garden cause basement water problems?**

- No
  - Can actually help drain water away from the house and help solve basement water problems.
  - Garden must be at least 10 feet from the house, downslope from foundation, and the overflow should be directed away from the house
  - Older basements without proper waterproofing may require a 20-foot setback

Installation and Maintenance

# Rain Gardens Gone Bad





## Poor Design







## Poor Design







## Poor Design







## Poor Maintenance

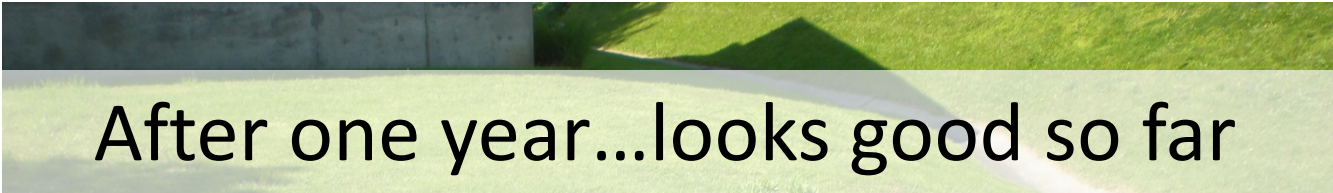


*Photo provided by Tami Kruer, Clark County SWCD*





## Poor Maintenance



After one year...looks good so far



But no one weeded....



*Photo provided by Tami Kruer, Clark County SWCD*





## Poor Maintenance



Volunteers finally weeded it....

*Photo provided by Tami Kruer, Clark County SWCD*





## Poor Maintenance

But, they used red mulch.



*Photo provided by Tami Kruer, Clark County SWCD*





## Poor Maintenance — Invasive Species







## Poor Maintenance — Invasive Species

Crown Vetch (*Coronilla varia*)





## Miscommunication

Designed to have several rain gardens capturing water from a large parking lot.



Soil didn't infiltrate and was supposed to be amended. But it wasn't.







## Miscommunication



Little infiltration



## Miscommunication

- A teacher organized a rain garden installation at her high school
- All grounds department staff were educated about the garden
- Regular staff went on vacation
- School district's central grounds crew sprayed entire rain garden with Round-Up







## Miscommunication with maintenance contract



August 2015

Year 1: Looks good so far....



August 2016

Year 2: Covered in morning glory vine.





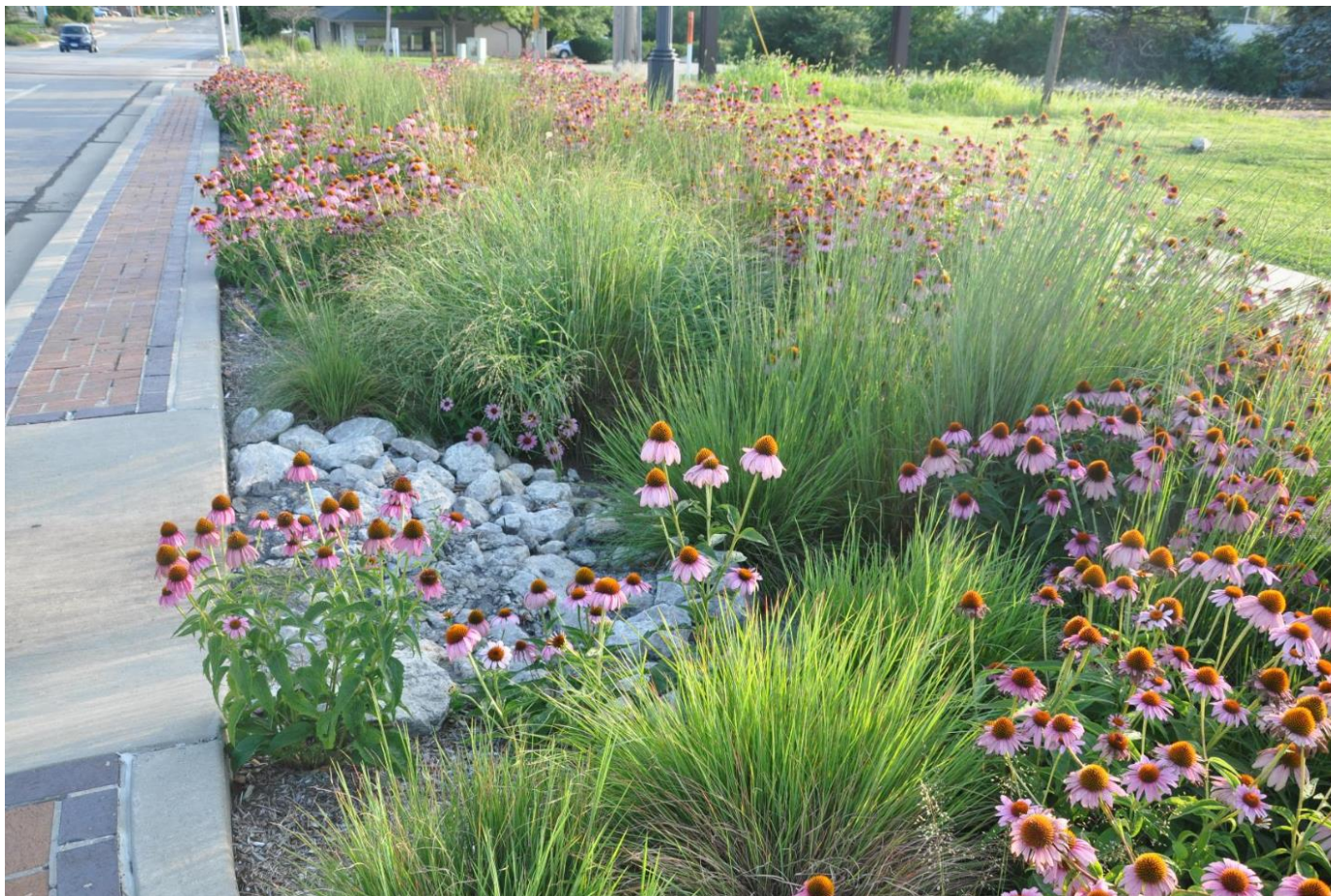
## Great Gardens







## Great Gardens



After a few years...bare spots filled in...looking good!