Rain Gardens

The Beauty & Benefits of Stormwater Management

Chicago Bungalow Association Seminar
Austin Library: March 8, 2017

Presenter: **Ryan Wilson**, Landscape Architect
Our Agenda for Tonight

• Reaffirm your good choice to be here
• Give you enough information to be dangerous
• Help you decide what action you will take next

To say it another way...
1. Give **CONTEXT** to your decision to install a rain garden
2. Give **STRUCTURE** for how you can install a rain garden
3. Suggest **ACTION** steps you can take
What is a Rain Garden?

“A rain garden is a shallow, planted depression that absorbs the water that flows from your roof, patio or yard, allowing it to drain directly into the soil.” –Philadelphia Water Dept

“Native and other deep-rooted plants help direct rainwater into the soil and if planted in a rain garden in conjunction with a disconnected downspout, native plants are especially effective for managing Stormwater” –RainReady

Image Credit: Dan & Jan McMahon
How does a Rain Garden Work?

- **Captures** water
- **Stores** water
- **Infiltrates** water

*Image Credit: Blue Water Baltimore “Rain Gardens for Healthy Streams”*
The Beauty & Benefits of Stormwater Management

1. Beauty
2. Benefits
3. Stormwater Management

What is your motivation?
What do you hope to accomplish?
Context

Deciding to install a rain garden
Bungalows in the Landscape

• Historic architectural style
• Corresponding landscape style
  • Prairie Landscape
  • Plants from the Region
  • Ecology, Horticulture
  • Caldwell, Jensen, Jensen, Griffin
• Parks movement
  • Columbus Park
  • Garfield Park Conservatory
  • Humboldt Park

Image Credit: University of Michigan
Since then....
Chicago has grown

• More Houses & Buildings
• More Pavement
• More Cars

• Bigger, More Frequent Rains
• More Flooding
• Hotter Summers
• Less Habitat
Reasons for Rain Gardens

• Address Stormwater issues
• Lower maintenance costs over time
• Reduce irrigation with potable water
• Provide habitat for pollinators, birds, and invertebrates

Image Credit: Ryan M Wilson
Clearing up Myths

• A good rain garden...
  • Does not typically hold water >24hrs
  • Is not a breeding ground for mosquitos
  • Does not require fertilizer
  • Takes less maintenance that a typical mown lawn
  • Can collect, store, and infiltrate water a safe distance from your foundation
  • Can meet your aesthetic preferences
  • Is a good companion to a Chicago Bungalow

Image Credit: Blue Water Baltimore “Rain Gardens for Healthy Streams”
Structure

Installing a rain garden at your home
Decisions, decisions, decisions...

- Who will do the work?
  - You
  - A Generous Neighbor
  - Paid Contractor

- What is your appetite for care?
  - Establishment Period (water, weed)
  - Seasonal Maintenance
  - Being a Good Neighbor
  - Weed Ordinances
1. Site Analysis

- What can you learn from your landscape?
  - Low spots
  - Low light
  - Poor Soils
  - Slopes to building

- What problem(s) will you try to solve?
  - Foundation seepage
  - Neighbor Envy
  - Climate Change
2. Selecting, Locating, & Sizing

- Which “tool” will you use?
  - Rain Garden
  - Bioswale
- What is your budget?
  - Current expense
  - Installation Cost
- What size do you need?
  - Do the Math or Use a Calculator
  - Percolation Test
- Where will it go?
  - Your Property
  - Proximity to Neighbors

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How To Calculate The Size of a Rain Garden

Let’s get started

1. Multiply the width by the length of the catchment area (total area that drains to rain into the detention area).
   - This measurement gives the square footage of the catchment area.
2. Multiply the catchment area by the amount of rainfall.
   - The catchment area should be sized to remove at least 0.5 inches of rain that falls on the catchment area.
   - The measurement is in (GDS) feet.
3. Divide by the depth of the rain garden.
   - The rain garden depth should be 6 to 8 inches.

After the calculation:

- Catchment area = Rainfall (in inches) / depth of rain garden (in inches) = Size of rain garden

Example for a 400 square foot catchment area:

- 400 square feet of catchment area x 0.20 (divided by the rain garden depth of 6 + 50 square feet)

- Stormwater capacity:
  - 400 square feet x 6 inches of rain = 2400 inches = 200 cubic feet
  - 200 cubic feet x 0.75 gallons = about 150 gallons per downpour
  - That means that a roof of about 400 square feet can capture about 1000 gallons every time it rains at least 1 inch.

The water can go into a rain garden area that is about 70 sq. ft. (10 x 7) or 7 x 7, etc.
3. Design Considerations

• What is your style?
  • Curvy or Straight
  • Low or High
  • Messy or Neat
  • High or Low Maintenance

• What qualities do you want?
  • Habitat
  • 4-season
  • Textures, Colors, Smells

• What plants do you like?
  • Perennial Plants & Shrubs
  • Bulbs & Accents
3b. Design Considerations

- What size plants will you use?
  - Plugs, Quarts, Gallons
  - Seed

- What type of mulch?
  - Leaf Litter
  - Bark Mulch

- How are your soils?
  - Excavation
  - Soil Amendments
3c. Technical Considerations

- How will you capture water?
  - Volume Sizing

- Where will it be installed?
  - Proximity

- What plants will you use?
  - Spacing
  - Size

4. Before you dig

• Are there buried wires or utilities?
  • Call or Click **Digger** before you dig
  • [https://ipi.cityofchicago.org/Digger](https://ipi.cityofchicago.org/Digger)
  • 312-744-7000

• Where will you buy your plants?
  • Local Plant Nursery
  • Community Plant Sale

• Do you need other materials?
  • Soil Amendments (sand, organics)
  • Stepping stones
5. Installing your Garden

• Do you have the right tools?
  • Soil Excavation
  • Planting
  • Spreading Mulch

• Do you have a plan?
  • Sketch

• When should you install?
  • Avoid hot, dry weather
  • Spring & Fall
6. Planting your Garden

• What plants should I use?
  • It depends on your garden

• Where can I get plants?
  • A Reputable Nursery
  • Seasonal Plant Sales

Source: Applied Ecological Services & The Conservation Foundation “Build Your Own Rain Garden”
ACTION

Maintaining a rain garden
Waiting for Rain…

• What happens during that first big rain?
  • Sit back and enjoy
• What happens afterwards?
  • Clean up debris
  • Redistribute Mulch
Maintaining a Rain Garden

- Mulching
  - Annual
- Fertilizing
  - Probably not
- Weeding
  - Seasonal
  - Spot Weeding
- Watering
  - During Establishment
  - Drought**
- Planting
  - Assess Periodically
Rain Garden Resources

Online Guides & Tools

• WI DNR’s classic “Rain Gardens: A How-to Manual for Homeowners”
• The Southern Lake Michigan Rain Garden Manual
• Rain Garden Alliance’s “Rain Garden Calculator”
• Planting Templates
• Blue Water Baltimore’s “Rain Gardens for Healthy Streams”
• ILCA’s “Contractors Guide to Small-scale Rain Gardens”
• Kevin’s Rain Gardens
• Tree People Site Assessment & Sizing Tools

Programs & Organizations

• Conservation@Home
• Forest Preserves of Cook County
• RainReady Home
• Chicago Botanic Garden
• Morton Arboretum
Additional Resources

Plant Lists

• Native Plants Suitable for Illinois Rain Gardens
• Lady Bird Johnson Wildflower Center website
• Prairie Rivers Network “Native Plants suitable for Illinois Rain Gardens”
• A Reputable Nurseryman or Contractor**

Plants, Nurseries & Material Yards

• Midwest Groundcovers
• Taylor Creek Nurseries
• Gethsemane Garden Center
• Lake Street Landscape Supply
Jan & Dan McMahon’s
Bungalow Rain Garden

Designed & Built by: Prairie Godmothers
Support by: Chicago Bungalow Association
Photos by: Chicago Bungalow Association & the McMahons
Before

After
Need Help?
Have Questions?

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