

Homeowners Rain Garden Do It Yourself Toolkit

What is a Rain Garden?

A rain garden is a planting bed deliberately designed to collect and filter rainwater and stormwater runoff.

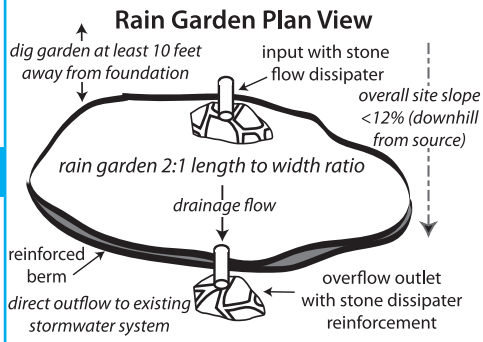
Why a Rain Garden?

When you collect rainwater from roofs, lawn areas, driveways and patios and direct it to a rain garden, you reduce stormwater runoff into the street and gutters. By this very act you:

- ***Reduce flooding*** by reducing the water that flows into the street and storm drain system.
- ***Protect water quality*** by filtering out pollutants that would otherwise end up in our rivers.
- ***Protect water quality*** by reducing overflows of sewage where old, combined sanitary and storm sewer systems exist - CSOs - which many communities have.
- ***Save water*** by reducing extra irrigation needed to maintain a garden.
- ***Recharge groundwater*** by helping to preserve the natural water balance of the soil.

Rain gardens are a NYSDEC "Blue Book" approved "Best Practice" for stormwater runoff reduction.

A rain garden is used to **delay** (lower peak runoff), **slow** (reduce erosion), **hold** (allow greater infiltration) and **treat** (filter sediments, debris and many chemicals) stormwater runoff.

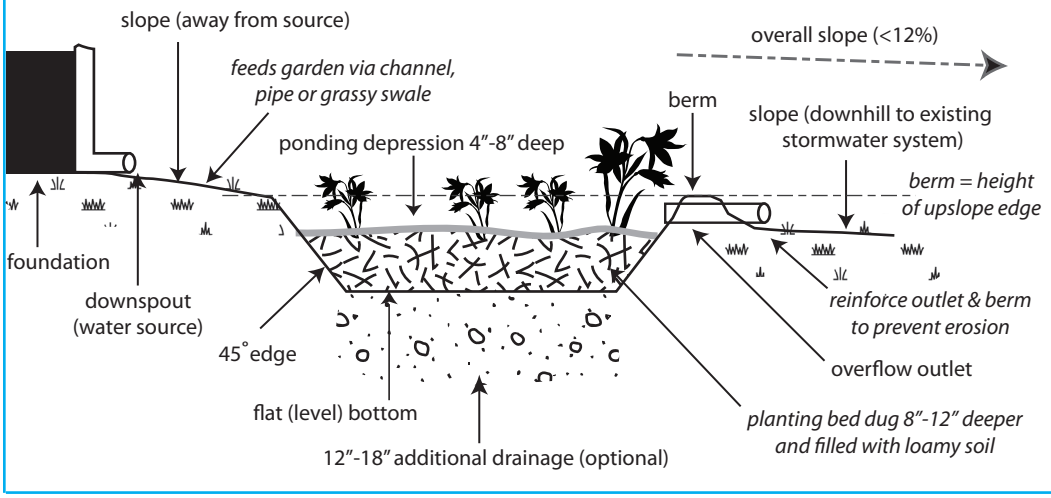


How Does It Work?

A rain garden requires a shallow depression from ground level (4-8") which acts as a ponding catchment for runoff. The planting bed is dug an additional 8 to 12" below this depression and re-filled with a highly absorbent soil mix (preferably loamy soil). The bed is then planted with primarily native species. This combination of soil and native plants allows for both the rapid absorption of stormwater and the efficient filtering of harmful pollutants.

Rain gardens are typically fed from the roof gutters and downspouts, but can also be fed from water flowing from sump pumps, patios, driveways and other impervious surfaces. Often a rain barrel is included between the downspout and the rain garden to allow collection of water for reuse. The rain barrel's overflow feeds the rain garden.

Rain Garden Cross-section



What Size and Shape?

Size: A 100- to 300-square foot garden bed with 4" to 8" of ponding depression and 8" to 12" of absorbent, loamy planting soil depth is "typical." A rain fall of 3" over 24 hours from a 1200-square-foot roof area could be handled by a rain garden of approximately 150-square-feet (10' x 15') with an 8" ponding depression. To handle heavier rain storms, you could dig deeper (to 12" ponding depression) or enlarge the garden's surface collecting area (to perhaps 20' x 15').

Shape: Your choice—kidney, crescent, teardrop, rectangular, etc. Generally, it should be about twice as long as it is wide.

Before You Dig Call
Dig Safe NY
at 1-800-962-7962

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Where Should a Rain Garden Be Located?

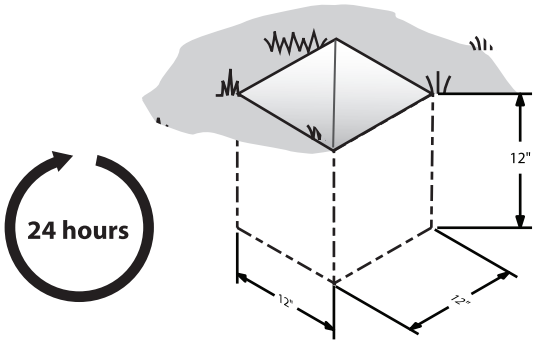
Pick a logical place to collect rainwater runoff: Typically, a garden is placed close to roof downspouts, or to patio or driveway surfaces. If your yard slopes, you might site it at the bottom of the slope. Then, determine how the water will get to the rain garden. You might attach a pipe to your gutter spout that drains into the garden. You could also dig a shallow trench ("swale") to direct the water to the garden.

Provide drainage: The soil underneath a rain garden should drain easily. A location with standing water, boggy soil or a very high water table (slow drainage), is NOT suited for a rain garden. You can conduct a simple percolation test by digging a hole roughly 12 inches wide and deep. Fill it with water. If the water is still there in 24 hours, locate your rain garden elsewhere.

Protect the house and plantings: The garden should be at least 10 feet from the building foundation and at least 25 feet away from a well or septic system. Make sure that adjacent trees and shrubs are water tolerant. *Before you dig always have utility lines on your property located. Call Dig Safe NY at 1-800-962-7962.*

Other considerations:

- Pick a relatively flat area to make digging and construction easier.
- Maximum grade for gardens situated on a slope should be 12% (1:8). If placed on a slope, the long side of the garden should be perpendicular to the slope to catch as much water as possible.
- Choose a location with full to part sun unless you want or know the challenge of shade gardening!
- If using a trench to get the water to your garden: you can reseed or plant the trench. Such grassy or planted areas around the garden help "pre-filter" sediment that would otherwise build up over time in your rain garden.
- If your yard will not accommodate a large rain garden, install two or more small ones.



Testing Drainage

How is a Rain Garden Installed?

Plan the bed: Outline the shape of your garden with mason's chalk, surveyor's paint, stakes and twine, or a garden hose.

Dig the bed: Dig around the sides of the garden to define its shape. If you build on level ground, create a flat, level bottom with 45° angle sides. If your location has a shallow slope, dig deeper on the uphill side to achieve a level bottom. Use dug soil to build a raised ridge (berm) on the downhill side, piling up dirt on three sides to hold in the stormwater. Firmly compact berm soil. Plant berm with grass, dense groundcover, or loose stone to minimize erosion.

Ensure that the water source flows into the rain garden depression: Shape adjacent lawn areas to drain into the bed by carving shallow swales as necessary. Extend downspout outlets to the garden (by way of pipe), placing rock around (or slate under) the pipe's output to slow water flow, prevent erosion, and disperse the water more evenly into the rain garden.

Provide overflow protection: Heavy or long rainfalls often result in overflow. Rain garden plans should incorporate ways to channel excess water away from a neighbor's yard and into another part of your yard, the woods, an existing storm drain, wetland, or stream.

Check the drainage: The garden should drain totally within 48 hours to eliminate risk of mosquito breeding. If it drains more slowly, add compost to the planting soil mix. After planting, add 2"-3" of shredded bark, leaf or other fine mulch to help keep the soil moist during dry spells and to discourage weeds. If you would like to increase your garden's capacity to absorb and filter water even more, dig 12"-24" deeper and add a layer of gravel (wrapped in landscape fabric) at the bottom of the bed. *(See Rain Garden Cross-section on front.)*

Choose your plants: Choose plants that have a variety of heights, textures, and bloom times, with the goal of installing at least 50% native species—providing valuable wildlife habitat. Select plants that can tolerate both wet and dry conditions (not pure "aquatics!") as the rain garden is meant to drain quickly. Choose trees, shrubs, perennials, ferns and grasses that are suited to the sun/shade exposure of your garden and that are deer resistant (if applicable). Water plants during the summer heat (for the first season or two) until established.

What Kinds of Maintenance Does a Rain Garden Need?

- Check the water inflow and overflow areas occasionally; clear them out as necessary and repair any erosion.
- Periodically check for pipe leaks or failing berms.
- Routinely remove dead stems, excess leaves, and any other accumulated debris – especially after a major storm and in the springtime.
- Throughout the year, conduct routine maintenance normally associated with garden care, such as cutting back perennials and grasses in early spring, dividing overcrowded plants, and filling gaps left by plants that have failed to thrive.
- Over time (5-10 years), you may need to remove layers of silt or sediment that accumulate in the rain garden ponding depression so as to maintain the depth of rain garden and to restore rainwater absorbtion. This is most easily done in the early spring when plants can be dug and replanted with minimal damage, or in the fall when plants are going dormant.



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