

By Katie Navarra

# Let it Rain

Photos provided by Katie Navarra

*Rain gardens are helping landscape companies manage stormwater runoff and meet increased regulations*

**S**tormwater runoff from heavy rainfall or melting snow carries pollutants such as soil, sediment and pesticides into natural waterways. Hard-surfaced areas such as roadways and driveways contribute to runoff because these surfaces shed water quickly after a rain event rather than allowing the excess water to slowly seep into the soil.

In recent years, local municipalities and state governments have passed regulations requiring construction companies and landscape contractors to install products, or use design techniques, that minimize stormwater runoff on commercial and residential properties.

Permeable pavers, drainage systems, retention ponds and other strategies are commonly used by landscape and construction companies to meet increasing regulations. A relatively new alternative is the installation of a rain garden.

A well-designed rain garden is cost efficient and relies on natural resources (soil and native plants) to capture, filter and return excess stormwater to aquifers, streams and rivers. Rain gardens combine environ-

mentally friendly functionality with colorful, eye-catching appeal.

Fundamentally, a rain garden functions like a giant sponge, absorbing water runoff from any type of hard surface. The garden itself is a depression in the ground that averages 200 to 300 square feet with a depth of 4 to 8 inches. In some instances they can be as deep one to 2 feet. Native plants and grasses are planted inside the depression.

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“(Native plants) have long root systems that help break up soil so that water can infiltrate the ground,” said Amy Boyajian, program associate for Rutgers Cooperative Extension. “A rain garden helps recharge aquifers and ground water levels, which is especially good for large urban areas where water sources are constantly being tapped without ‘recharging’ the ground water source.”

A rain garden is actually dry most of the time. After a rain event or spring snow melt, a rain garden serves as a holding area for excess rainwater. Over the course of two to three days, the plants allow the water to percolate into the soil. Because native plants have long root systems, they act as excellent filters. The plants capture sediment, pesticides and other pollutants, limiting the contaminants entering streams and waterways.

### Design and installation considerations

Location selection is an important consideration for any rain garden. An area in full or partial sunlight will allow for the widest variety of plants; but with careful plant selection, an area in partial shade can work as well.

A rain garden can be installed near a downspout to handle rooftop runoff, or placed in an open area to capture runoff from a lawn or driveway. First, survey the property and find a spot that has a natural slope between 1 and 10 percent. Position the rain garden a minimum of 10 feet away from the building’s foundation, and never place a rain garden on top of a septic system.

The size of the rain garden is determined by the type of soil. “You need to have good drainage,” Boyajian emphasized. “If there is not good drainage you need to improve it before planting.”

In sandy soil, plan a rain garden equal to 20 to 30 percent of the entire surface area where runoff occurs. For example, if a residential property has a roof and driveway totaling 1,200 square feet, a rain garden should be 240 to 360 square feet. Placing a rain garden in an area with clay soils can be challenging. Heavier soils do not absorb water as well as sandy soils and it can take up to three years for the native plants to become fully established. Amending the soil prior to planting is the best option. However, if soil amendments

or complete soil replacement is not an option for an area with clay soil, a rain garden should be at least 60 percent of the drain area. A residential property with a roof and driveway measuring 1,200 square feet and clay soil should have a rain garden of 720 square feet.

### Investment and maintenance requirements

A rain garden can provide an economical option for controlling stormwater runoff. The cost of a rain garden varies based on the final size, plant selection and the condition of the soil. Plant costs vary and depend on if young or mature plants are chosen. “Typically it costs \$3 to \$5 for installation, not including labor costs,” said Boyajian.

Maintaining a rain garden is relatively simple, but that does not mean it is maintenance free. Initially the garden will require watering to help the plants get established. Regular weeding will also be necessary to avoid the takeover of weeds. Over time the maintenance requirements lessen and the garden becomes self-sustainable, leveling out the cost of the original installation.

Rain gardens are an extremely flexible option for controlling pollution from stormwater runoff. Because they are rela-

tively small in size, a lot of space is not needed to construct one. They can also be designed to fit into any odd-shaped lawn area, and they can be installed on properties with existing buildings and infrastructure.

Once a rain garden is installed and landscaped, it adds beauty to a lawn or property. Not only do rain gardens offer an aesthetically pleasing alternative to controlling stormwater runoff, they also provide environmental benefits including a home for birds, butterflies and beneficial insects. **■**

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To learn more about rain gardens or for tips on design techniques visit the following:

- \* [www.Raingardens.org](http://www.Raingardens.org)
- \* [www.water.rutgers.edu](http://www.water.rutgers.edu)
- \* [www.npsnj.org/](http://www.npsnj.org/)
- \* <http://clean-water.uwex.edu/pubs/raingarden>
- \* [www.cmhc-schl.gc.ca/en/burema/gesein/abhose/abhose\\_075.cfm](http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/abhose_075.cfm)
- \* [www.uri.edu/ce/healthylandscapes/raingarden.htm](http://www.uri.edu/ce/healthylandscapes/raingarden.htm)

