



Suggested Methods to Size a Rain Garden (cont.)

Step #3 is to determine the depth of the Rain Garden. It is recommended that the Rain Garden should be free of water after 24 hours. The depth of your pond should not be any deeper than your soil's infiltration rate/day. If the infiltration is 5 inches/day then make the rain garden no more than 5 inches deep. It is generally recommended not to exceed a depth of 8 inches even if your infiltration rate/day exceeds 8 inches/day. A depth of 6" to 8" is generally recommended for most Rain Gardens with soils that have an infiltration rate of 8 inches/day or more.

Step #4 is a simple calculation to determine the area of the Rain Garden.

Drainage Area/Depth of Rain Garden = Area of Rain Garden

Example: Drainage area of the roof = 12 ft. x 15 ft. = 180 sq. ft.
 The infiltration rate was measured at 5 inches/day
 A depth of 4 inches was selected for the rain garden
 180 sq. ft. divided by 4 = 45 sq. ft.

After you have determined the size of the Rain Garden you can decide what shape to build it. A 45 sq. ft. Rain Garden could be a square 7' by 7' or rectangle 5' by 9' or an 8' circle. For odd shapes, graph paper can be handy. Using the graph paper, make each square one foot by one foot. Draw the design on the graph paper and count the squares to determine the area.

Problem Soils

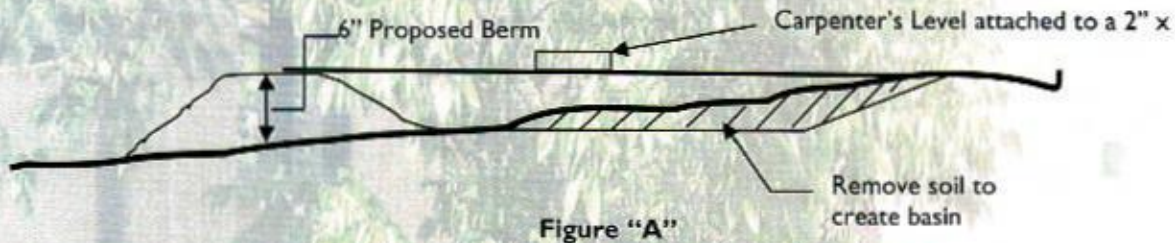
Some soils are so densely compacted or have a persistent high water table that water will not drain out of the test hole. These soils are not suitable for a Rain Garden unless conditions are modified. The homeowner has several choices. He can decide not to build a Rain Garden, try another location or improve the soil drainage. The "What You Need to Know About Your Soil" tip sheet describes the process of amending the soil or adding drain tile for a Rain Garden. Contact the Soil and Water Conservation District in your county to get professional advice on how to improve the soil and add tile drainage.



Preplanning, Design and Construction (cont.)

Designing Your Rain Garden (cont.)

For a typical lot with a level yard the bowl will be dug out to create the water storage. If your lot has sloping topography you can build a berm or dam on the downhill side and trap the water into a bowl shaped pool. (See figure "A") This requires less digging but more careful layout. You will need to measure the amount of drop to determine the height of the dam and how much soil to remove to attain the necessary depth. A carpenter's level attached to a 10-14' long 2" x 4" will help determine the amount of drop in the yard. After you have decided on your layout you can consider other components that will make your RG look better and be easier to maintain. Stones or sculpture can be added to give a finished look. Edging around the garden prevents grass from creeping into the garden and gives it a professional appearance.



Constructing Your Rain Garden

With the planning completed you can prepare for construction. Spring construction and planting is best for buying plants, preparing the soil and keeping the new plants moist. You can also watch for plant sales from garden and plant organizations like Master Gardeners and Indiana Native Plant and Wildflower Society.

Construction of the rain garden can take 8-10 hours. Baking flour, rope or string can be used to mark the outline of the garden. A glyphosate herbicide can be used to kill the grass or a sod cutter can be rented to remove the sod. Most of the soil from digging the basin can be made into a berm on the downhill sides of the RG—away from the house. Making short landscape berms keeps the excess soil close to the digging and eliminates having to haul it away. Make sure you do not block the flow of incoming water into the basin. Shallow ditches or swales can be cut into the yard to direct the water from a downspout or patio into the RG. Plastic tile buried below the ground is another good way to direct the water from a downspout to the RG. Rock or stone may be needed where the water enters the garden to prevent erosion.

As the water builds up in the basin we want it to flow out of the basin and away from the house. Make sure that a 5' wide strip of ground at the low end remains unchanged to permit water to flow out of the basin. Rain Gardens using a small dam to hold water will need to be built to prevent water from backing up towards the house.

A rotor tiller is a great tool to condition the soil for final raking, shaping and planting. If the soil needs to be amended to improve growing conditions or infiltration (see "What You Need to Know about Your Soil") you will need to remove another 4-6" of soil from the RG basin. Compost and/or sand can be added in 1" layers. After a 1" layer of compost or sand is added thoroughly mix the soil with a rotor tiller and go through the process until the basin is built up to the designed level. Once the soil is prepared you can do a final test before planting. Saturate the site with a sprinkler and fill the basin with your garden hose. Monitor the water and make sure it soaks into the soil in 24 hours. If the basin is still holding water after 24 hours then you may want to consider making the basin shallower, amending the soils, adding drain tile or reducing the amount of water if that is possible.

After the water test the RG is ready to plant. Plugs or potted plants are recommended for the garden. A 2 ¼" planting auger powered by an electric drill can speed up the planting process. Most of the native plants can be placed 12" apart as they are the primary mechanism to return water to the ecosystem. Mulch between the plants with course shredded hardwood mulch to hold moisture and reduce weed pressures. Edging, rocks, and other landscaping items can be used to make your RG have a finished look.

This fact sheet is part of a series of helpful publications made possible by a grant from the Lilly Endowment Inc. For more information contact your county's Soil and Water Conservation District or go to our website. The Hoosier Heartland RC&D Council and our partnering organizations are equal opportunity providers and employers. We are a 501c3 not-for-profit organization that works to teach people how to care for, improve, and protect their natural resources in a way that improves the economy, environment, and quality of life in Central Indiana.