SIZING YOUR RAIN GARDEN

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Description: Determine the size of your rain garden, based on the infiltration rate of your soil, and the area of impervious surface you wish to treat.

Preparation: Call before you dig, and confirm you have all underground utilities located. Gather a shovel, a bucket of water or other water source, a craft stick, a ruler, and a way to record your results.

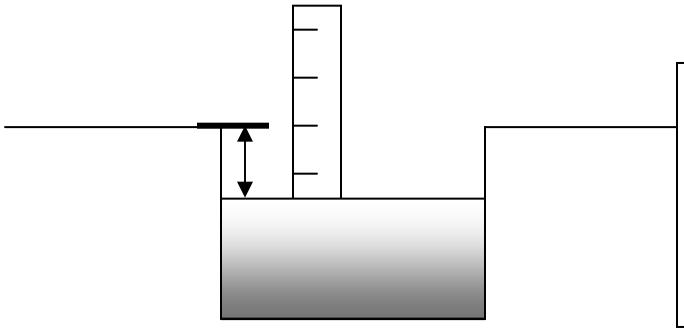
Step 7: Decide on the placement of the Rain Garden. Use **Table 1** to guide your placement decision

TABLE 1 – Guidelines for Rain Garden Placement

- Keep more than 10' (20' best) from building to avoid a wet foundation.
- Do not locate over buried utilities, septic field, or wells.
- Avoid placing uphill of a building.
- Avoid placing beneath trees to prevent damage to tree roots when digging.

Step 1: Dig a Hole and Fill it with Water. Test the soil in the area sited for your rain garden. The hole can be a minimum of 8" across by 8" deep, but you can dig up to 1' by 1' or more, if you are curious to investigate your subsoil. Fill the hole with water and let it drain for 24 hours. Fill the hole again, mark the fill line with the craft stick, and then start to measure soil infiltration.

Step 2: Measure **Water Level**. See how fast water drains into this soil.



Measure how far the water level has dropped from the fill-line marker. (Record results on next page.)

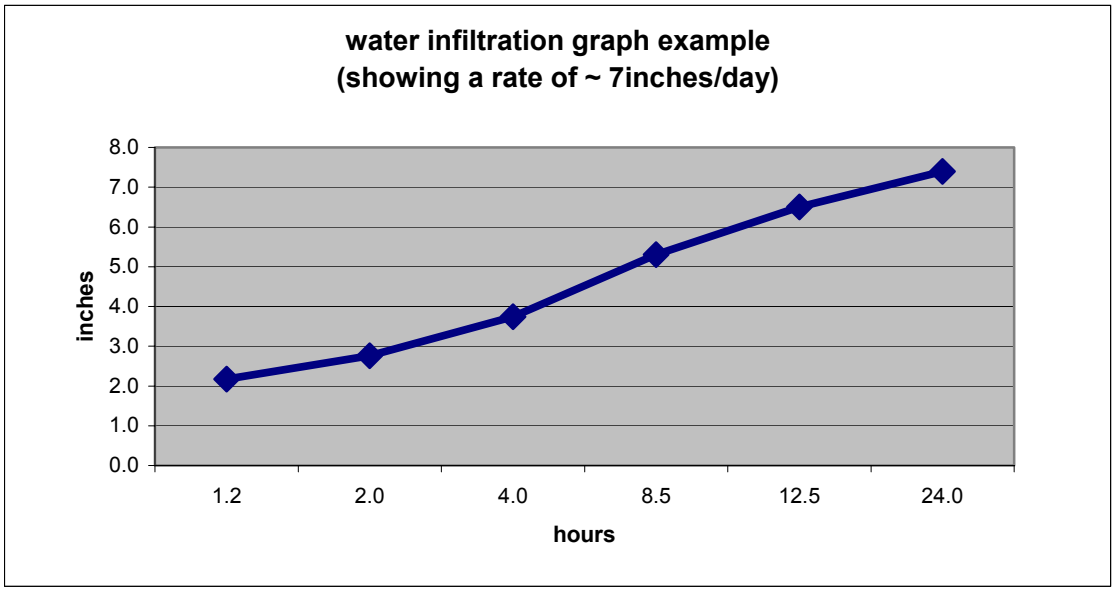
Record Results:

Length of Time (hours)	Amount of Infiltration (inches)

Step 3: Determine Daily Infiltration Rate: Since you want the rain garden to drain within 24 hours, find out how many inches of water your soil drains in a day. Either calculates as below…..

Infiltration Rate = $\frac{\#\text{ inches}}{\#\text{ hours}} \times \frac{24\text{ hours}}{\text{day}} =$ ☐ $\frac{\text{inches}}{\text{day}}$

Or graph your results, observing or extrapolating to 24 hours…



Step 4: Determine the Basin Depth based on Infiltration Rate. The Basin Depth is equal to the daily inches of infiltration you just determined, with the following exceptions: Rain Gardens are not recommended if the infiltration rate is 1 inch or less in a day, and that the maximum recommended depth is 8". (Deeper Rain Gardens would require the use of a more limited palette of plants to tolerate deeper flooding.)

Record Results:

Basin Depth (inches) = Infiltration Rate = ☐

Step 5: Measure the Impervious Surface Area: Measure the surface area of roof, driveway, patio, or expansive lawn to treat, either with a tape measure or by downloading a sketch/map of your home and property from the County Auditors web site/GIS mapping service.

Record Results:

Treatment Area (square feet) = ☐

Step 6: Determine the Basin Size needed to drain the Area above. Calculate the total Basin Area needed to manage the volume of storm water running off the treatment area in a 1-inch storm event. (This will size the basin to treat more than 90% of the annual rainfalls in Central Ohio.)

Record Results:

$$\text{Basin Area (sq. ft.)} = \frac{\text{Treatment Area}}{\text{Basin Depth}} =$$ ☐

Sample Basin Area Calculation:
500 sq. ft. roof receiving 1 inch of water will drain into a 5-inch deep basin:

$$\frac{500}{5} = 100 \text{ sq. ft. basin}$$

A basin 5 inches deep needs an area 1/5 the size of the roof to manage the same water volume.