

[Type text]



Rain Garden design and construction notes

Benefits of a rain garden: Sink water into ground, filter runoff, create wildlife habitat with plants.

Combines well with a rain barrel, to accept the overflow.

1. Location – downhill. Observe how water flows across your landscape and find where it naturally collects. Locate where water runs off roofs, sidewalks, parking lots, or other impervious surfaces, and downspouts from roofs. Where does the water go from the downspout or pavement?

Gentle slopes are best for a rain garden site, ideal is 2 - 15% slope. Totally flat sites or very steep sites don't work well. On steep slopes, you can construct a contour swale – a different type of storm water feature.

Clearances – Locate the rain garden 3 ft. from sidewalk, 5 ft. from property lines, 10 ft. from buildings, and away from underground utilities and mature trees w/extensive or water sensitive roots.

Plan for overflow from the rain garden – where will it go?

2. Drainage – perform infiltration test. This will impact the rain garden size and determine if an under drain is needed.

Also conduct a soil test for texture – sand/silt/clay.

3. Size (area) of rain garden –

Measure area of impervious surfaces draining to the rain garden: paved surfaces, roofs (which part will drain to your rain garden?), heavily compacted soil on pathways, etc. Google Earth can help determine building footprints.

Rain garden area should be 4% of drainage area (or 10 – 30%, depending on the soil type)

If this is larger than the area available, you might: Capture some of the water in rain barrels?
Design a series of rain gardens? Or discharge excess to storm drain.

4. Depth – Finished depth should be 6 - 9 inches. Excavate down a total of 9 – 24” to allow room for amending the soil.

In poorly drained soils, dig deepest, then fill in with amended soil or a well-draining soil mix to 6” depth.

5. Shape – outline potential shapes for the rain garden with a rope/hose/string. You can draw a proposed rain garden on graph paper to scale, then count the squares on the graph paper to determine the total area of the garden.

[Type text]

The sides of the rain garden should slope 2:1 – If the finished rain garden will be 6 inches deep, then the sides should be 12 inches wide. Create a second outline for the bottom of the rain garden – this will be a flat area where water can collect.

6. Getting water to - and from - the rain garden

Inflow - how will water naturally flow? How much does the land slope? You need at least 2 % slope for the water to flow in most situations (this is approximately ¼ inch per foot). Do you need a diversion swale to route water? Again, 2- 8 % is best for your swale, or add check dams if steeper. Buried pipes can take water down >> 8% slope. Protect inlet to garden with rock to prevent erosion.

Outflow - always allow for overflow, and plan where it will go. Should be 2 - 5 inches in elevation below inflow.

Under drain – a perforated pipe at the bottom buried in gravel, which connects to outflow. This is a more complicated design, only needed for heavy soils.

You don't want water to pool or stand more than 48 hours, so your garden doesn't breed mosquitoes.

7. Have a digging party! Plan where the removed soil will go - use to construct a berm if needed. Dig the center (inner flat area) first, then lay back the slopes.

Amend soil in bottom of ran garden as needed. Usually dig 3" of compost into the top 6" of soil.

8. Plant in zones – the bottom of rain garden needs plants that can tolerate occasional flooding and soggy soils. But in our climate, they also need to tolerate drought. Gray rush (*Juncus patens*), and some sedges (*Carex sp.*) are suitable.

Sides of rain garden - plants that can tolerate occasional soggy soils in winter.

Top edge - drought tolerant plants. You may wish to create a raised mound or plant on berm to keep the root crown dry. Deep rooted plants will help loosen up heavy soil over time. Usually you will need only one large shrub or tree, on berm or sides. If your rain garden is shady, you will need to take that into account when choosing plants. Irrigate your plants occasionally for the first summer.

See plant list.