

Rain Garden Design Worksheet

Date: _____

Designer: _____

Location: _____

STEP 1. Sketch the Site

Be sure to include permanent fixtures including the house, garage, sheds, large trees, driveway, sidewalks, and fences. Indicate which direction is north, downspout locations, low-lying areas in the yard, the general direction stormwater flows across the yard and the sun exposure in different areas of the yard. Highlight or hatch the areas where you plan to divert rainfall runoff to your rain garden.

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STEP 2. Determine the Roof Drainage Area of the House, Garage or Other Buildings that will Drain to the Rain Garden

$$\begin{array}{rcccl} \text{Length of House} & \times & \text{Width of House} & = & \text{Total Square Feet of Drainage} \\ \text{________ ft} & \times & \text{________ ft} & = & \text{________ sq ft} \end{array}$$

STEP 3. Determine the Drainage Area for Each Downspout by Dividing the Total Square Feet of House Drainage by the Number of Downspouts

$$\begin{array}{rcccl} \text{Total Square Feet of House} & \div & \text{Number of Downspouts} & = & \text{Drainage Area per Downspout} \\ \text{________ sq ft} & \div & \text{________ downspouts} & = & \text{________ sq ft/downspout} \end{array}$$

STEP 4. Determine how many Downspouts will be Directed to the Rain Garden and Multiply by the Result from STEP 3

$$\begin{array}{rcccl} \text{\# of Downspouts to Garden} & \times & \text{Drainage Area/Downspout} & = & \text{Drainage Area to Rain Garden} \\ \text{________ downspouts} & \times & \text{________ sq ft} & = & \text{________ sq ft} \end{array}$$

STEP 5. Add Drainage Areas of Other Locations that will Flow to the Rain Garden (Driveways, Sidewalks, etc.)

$$\begin{array}{rcccl} \text{Square Footage of Other Areas} & + & \text{Roof Drainage Area to Garden} & = & \text{Total Drainage Area} \\ \text{________ sq ft} & + & \text{________ sq ft} & = & \text{________ sq ft} \end{array}$$

STEP 6. Divide the Result of STEP 5 by the Infiltration Rate of the Soil

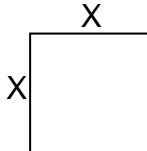
Assume for this example that the water level dropped 1 inch in 6 hours during the infiltration test

$$\frac{1 \text{ inch}}{6 \text{ hours}} = \frac{X \text{ inches}}{24 \text{ hours}} \quad \rightarrow \quad X = 4 \text{ inches} = \text{Recommended Rain Garden Depth (for this example only)}$$

STEP 7. Divide STEP 5 Result by the Recommended Depth from STEP 6 to Determine the Rain Garden Size

$$\begin{array}{rcccl} \text{Total Drainage Area} & \times & (1 \text{ (inch)} \div \text{Depth of Garden (inches)}) & = & \text{Rain Garden Size} \\ \text{________ sq ft} & \times & (1 \text{ inch} \div \text{________ inches}) & = & \text{________ sq ft} \end{array}$$

STEP 8. Determine the Length of the Sides by Taking the Square Root of the Rain Garden Size from STEP 7

$$\sqrt{\text{Rain Garden Size}} = X \text{ ft}$$


STEP 9. Determine the Number of Plants Needed by Dividing Rain Garden Size from STEP 7 by 2.5

$$\begin{array}{rcccl} \text{Rain Garden Size} & \div & 2.5 \text{ sq ft} & = & \text{Number of Plants Needed} \\ \text{________ sq ft} & \div & 2.5 \text{ sq ft} & = & \text{________ Plants} \end{array}$$