

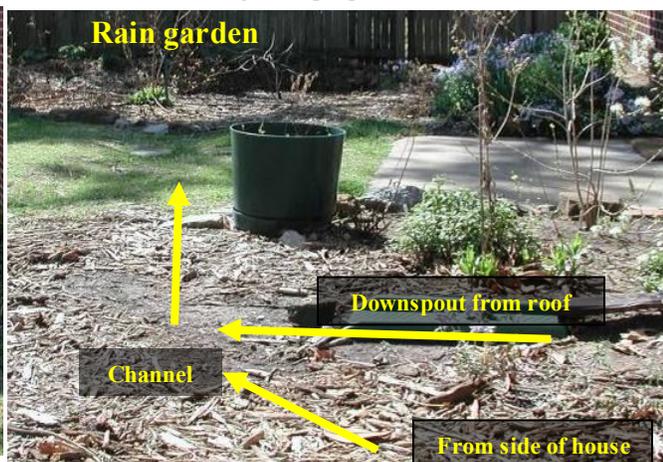
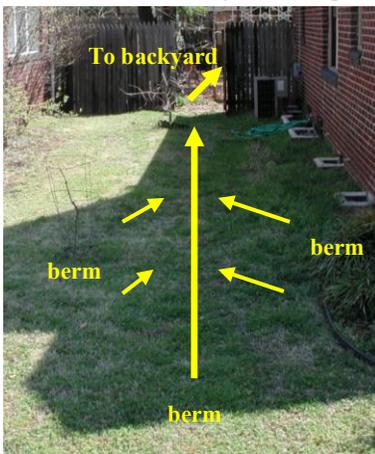
## What is a Rain Garden?

A rain garden is a planted depression that is located to capture rainwater from small storms, allowing the captured water to soak into the soil. They are sized so that no standing water remains 1 to 2 days after the storm ends. Plants and soil both work to absorb and filter pollutants and return cleaner water through the ground to nearby streams. Once established, they do not need supplemental watering during normal dry periods.



## Where should a rain garden be located?

For a rain garden to be effective, it should be located where water flows during storms. When it rains, go outside and take note of places where water flows on the landscape. Rainwater is typically concentrated where downspouts drain off the roof, off the driveway or other pavement areas, or from adjacent properties.



**Figure 1.** On left, built up berms divert water from the uphill side of the house to the backyard. On right, water from the side of the house and from a disconnected downspout flows through a channel to a rain garden in the background.

If a garden does not fit your landscape near these locations, consider diverting water to a favorable location by creating channels (sloping trenches) and/or berms (mounded soil) to steer water where you want it to go (Figure 1). Channels and berms can be mulched, rock-lined, or planted according to your landscape design preferences.

Are your downspouts connected to pipes running to the road? Why let this water go to waste when your plants can use it? Disconnect your downspouts and divert them to a low area. Simply saw off the bottom of the gutter and attach an elbow section and an extension to divert the water away from your house. Figure 1 shows a downspout diverted 5 feet from the home and carried to a rain garden by a channel.

During heavier rains, rain gardens fill up. When deciding on the rain garden location, you need to consider where excess water will go in these situations. Because of the need to control overflow of excess water, rain gardens are best located somewhere along a gentle slope, rather than in an existing low area that has nowhere to drain.

## How big should a rain garden be?

A home rain garden should fit your landscape. Any water that can be captured will result in environmental and landscaping benefits. For maximum benefits, a rule of thumb might be 5% of the area the water drains from (i.e. roof area, etc.).

## How deep should a rain garden be?

Dig a hole about a foot deep and wide in the area you plan to build a rain garden. Fill the hole with water and allow to sit for a couple of hours to saturate the soil in the area. Refill the hole and measure the drop in the water every hour or so until you can determine how many inches of infiltration you get in a day. The drop in a 24 hour period should be the

### Locations to Avoid

Rain gardens are great accents to your landscape, but it is best to avoid a few places on your property:

- Within 5 to 10 feet from your house (especially if you have a basement) – use channels or extenders to divert downspout water to a suitable location (Figure 1)
- Uphill side of your house – divert water around the house to a suitable location (Figure 1)
- Over utility lines – avoid ponding water over pipes unless drainage is exceedingly rapid (drains within 1 hour)
- Above retaining walls
- Near mature trees – proceed carefully in order to avoid excessive damage to roots

# Blue Thumb Rain Garden Guide

approximate depth of your finished rain garden (12 inches should be the maximum depth, no matter how quickly the soil drains).

Example: 1 inch drop in 4 hours would equal 6 inches in 24 hours. Your rain garden should be about 6 inches deep.

Of the two factors that determine the size of your rain garden, depth and area, only depth is critical. Unless your soil drains very rapidly, your rain garden should not be deeper than 1 foot below your outlet. One reason for this maximum depth is to ensure that the rain garden drains within about a day. It takes several days for mosquito larvae to hatch in a wet environment; rapid drainage prevents mosquito proliferation. Also, rain garden plants should tolerate saturated soils for a while, but most plants that handle the drought between storms can only take inundation for about a day.

## Building your rain garden

Simply dig a depression in your landscape and build a berm with the available soil. A berm is simply an earthen dam. You should make the berm higher than your desired depth of the rain garden because you will remove a portion of the berm to make an outlet.

To construct your outlet, determine where your landscape can handle excess water (somewhere that won't erode like a grassy area or a paved surface). In that area, simply remove some of the soil along the berm and pack it down (Figure 2). Cover the outlet bottom, sides, and part of the top of the berm with a landscaping fabric to protect the outlet from erosion (Figure 2). Finally, cover the landscaping fabric with rocks that hold down the landscaping fabric, hold back mulch, and add an attractive feature to your rain garden (Figure 2). Cover the rest of the berm with mulch or groundcover.



**Figure 2. Packed soil in the outlet notch in a berm (left). Proper covering of the outlet bottom, sides, and top (middle). Rocks covering the outlet (right). The berm keeps water in the newly developed rain garden. The outlet notch can be raised or lowered to ensure the rain garden retains the right amount of water.**

## Trial and Error

When it rains, if the garden retains water for more than a day or two, lower the outlet by removing some soil from the outlet. If the garden drains in a few hours, consider raising the outlet by adding more soil (making sure the water will not cover areas not intended to flood upslope of the rain garden).

## Add Plants

Be creative. The best plants for rain gardens are certain native plants. Many of the native plants tolerate periods of wet weather (like our generally wet springs) and tolerate the dry periods (like our hot, dry summers). Native plants are also resistant to local pests (preventing the need for pesticides) and attract native butterflies and other insects that only host on particular plants. After the first year, you should not need to water your rain garden in a normal year once the plants are established. See the Blue Thumb Rain Garden Plant Lists for plants recommended for use in Oklahoma rain gardens.



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