

RAINWATER COLLECTION

People have collected rainwater since ancient times. It is an old skill that is still relevant today. An average residential roof will produce a large amount of runoff even with very little rainfall. During a 1" rainfall you can collect just over a half gallon of water for each square foot of roof, or about 60 gallons for every 100 square feet. That's a lot of water.

Rainwater harvesting systems can be as simple as a large container with a spigot at the bottom placed under a downspout. 55-gallons are the most commonly available container size. Set the barrel on a level, solid surface as a full 55-gallon barrel will weigh several hundred pounds. Raise it using concrete blocks or bricks to improve water flow rate. The increased pressure works well for low-pressure drip irrigation or soaker hoses but will not support sprinklers or a hose end sprayer. It is important to cover the barrel with screens to prevent mosquitoes from breeding in it. Installing a 1mm or smaller screen at any point where standing water could be exposed to the outside environment will keep them out.

Because roofs will collect dust and bird droppings between rainfall events, it is best to include debris screens and a diverter in your rain harvesting system. The run-off that first comes off the roof is called the first-flush and will have the highest percentage of contaminants.

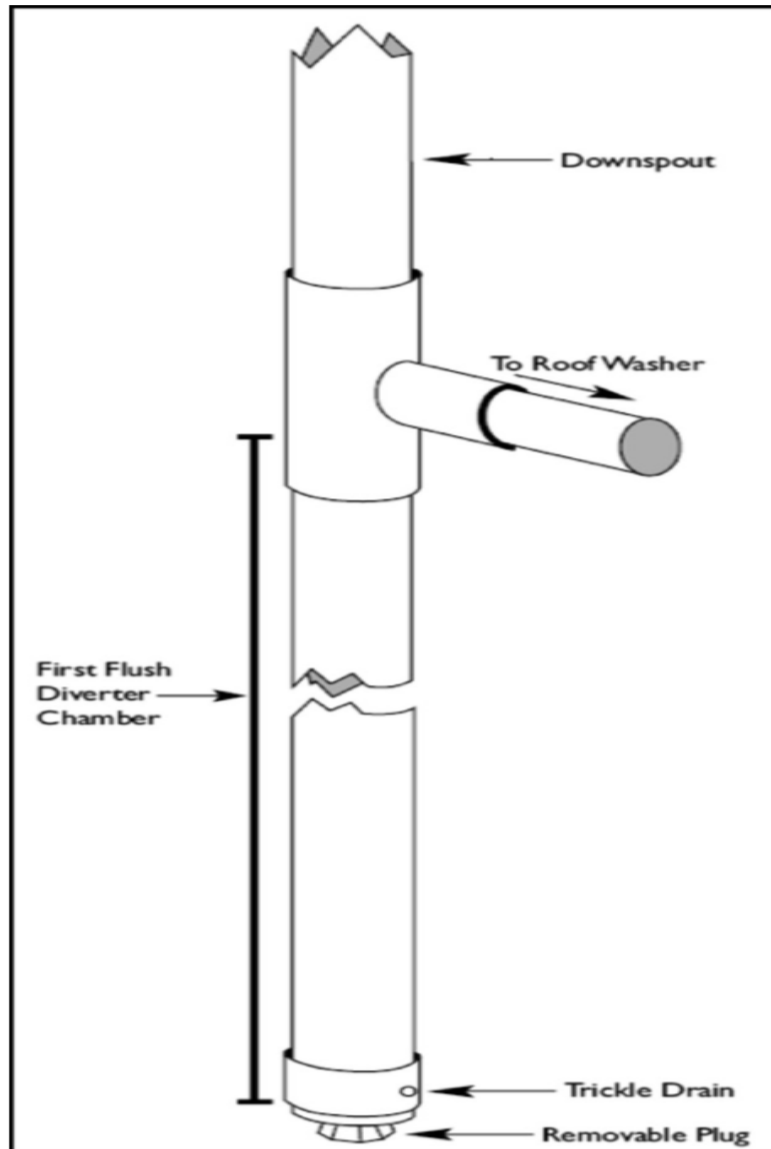


Figure 2. First flush diverter (Rupp, 2006).

A diverter helps isolate the first flush from the rest of the runoff so harvested water will have a lower percentage of roof contaminants. This diverter routes the water coming off a roof into a slow draining pipe that will fill up first. Once it is full, the overflow valve will carry subsequent runoff into the primary storage container. After every storm event while the system is in use, the first flush diverter should be cleaned out.

Debris screens fixed into the gutter or piping will help pull out large debris like leaves and twigs.

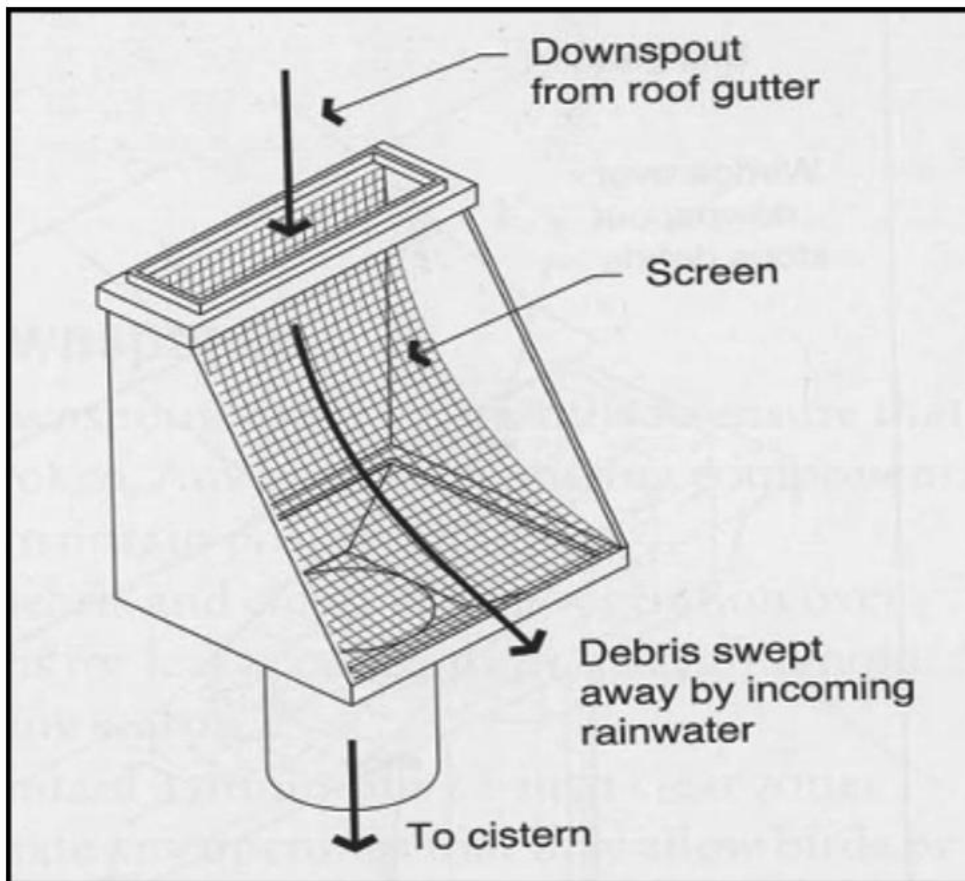


Figure 3: Roof washing system for rainwater harvesting.
Source: (Kinkade-Levario 2004)

It is important to include an overflow valve in the storage container, too. Once the container is full, any excess runoff can be directed away from buildings and foundations to French or surface water drains. Be sure to cover the end of the overflow with wire mesh or a flap valve to keep out insects and animals. You can also link two barrels together to collect the overflow and store more water.

Pre-constructed rain barrels and ready-to-assemble kits are available at your local lawn and garden and big box stores. For us DIY folks, *Oklahoma Gardening* features two episodes on “How to Build a Rain Barrel” available on the Tulsa Master Gardener

website. Go to mg@tulsamastergardeners.org. Choose *Lawn and Garden Help* on the main page, then under *Tips and Techniques*, click on the *Water Conservation* tab.

Capturing rain run-off from your house is a good water conservation technique. Decorate your rain barrel. Show your sense of style and save a little on your water bill, too.

You can get answers to all your gardening questions by visiting our website, www.tulsamastergardeners.org, by calling the Tulsa Master Gardeners Help Line at 918-746-3701 or by emailing us at mg@tulsamastergardeners.org, or come see us at our Diagnostic Center at 4116 E 15th St., Tulsa, OK.



Resources:

[BAE-1757 Design of Rainwater Harvesting Systems in Oklahoma, OSU Extension](#)

[L-332 Xeriscape Demo Garden, Edmond, OK, OSU Extension](#)