

Rain Barrel Construction Workshop

Why harvest rain?

In a state with weather like Oklahoma, we all realize that water is a precious resource in need of conservation. As a matter of fact, Oklahoma is currently revising the Oklahoma Comprehensive Water Plan to guide water management for the next 50 years.

Harvesting rain water is simply collecting and storing rain water from impervious surfaces (like rooftops) that would otherwise run off to local streams. Harvested rain water can be used to water lawns and gardens, wash cars or for other similar uses. Using potable water (water suitable for drinking or cooking) for these applications is a waste of an important resource that is in ever-increasing demand.

Harvesting rain water also helps to address storm water pollution. Rain is relatively clean when it falls but it picks up pollutants as it flows across parking lots, streets and other areas. Storm water flows into drains and eventually into streams and ponds. Collecting and storing rain helps to decrease both the volume and rate of storm water runoff.

Rain from your rooftop

Almost all the rain that falls on your rooftop runs off onto the landscape from valleys or gutters and downspouts. Discounting evaporation and leakage, and assuming a horizontal surface, just 1/10 of an inch of rain on a 1000 square foot roof produces about 62 gallons of water! In Norman, our average annual precipitation of about 38 inches produces almost 24,000 gallons of water from that same 1000 square foot roof every year!

Rain barrel construction

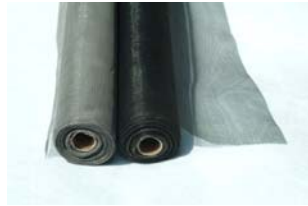
Although you can also purchase them ready-made from many garden supply catalogs, making your own rain barrels is an easy and inexpensive way to harvest rain from your roof. To make your own, you will need:

- **Barrel.** Used or surplus barrels are available from many sources. However, you want to be sure to use plastic **food-grade barrels** and not ones that contained chemicals or fuels. Locally, we have found Big Ed's Surplus in Okarche to be a great source for 30, 55 and 60 gallon barrels (405-263-4700).
- **Water inflow.** In general, you have two options to get water into your barrels.
 - If you are harvesting water from a roof valley, you can remove the barrel top completely and replace it with a screen. Window screen (available at any hardware store) works well. You will need to anchor the screen to the barrel either using the barrel ring (if available) with a hook and eye, or with a bungee cord or similar device.



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- If you are harvesting water from a downspout, you will need to cut a 4 inch (or whatever diameter works) hole in the top of the barrel and place a louvered grate in the hole (available at any hardware store). The downspout will need to be cut at the appropriate height, so that water will flow into that hole. Replacing the elbow at the new elevation will help direct water to your barrel.



- **Overflow.** It is very important that you drill a hole in the side of the barrel near the top as an overflow – once it fills you want to have control over the excess water. This hole can be tapped with a hose fitting (be sure to use thread seal tape) so you can direct the overflow through a hose into another barrel in series, a specific garden area or even a pond.



- **Water outflow.** For regular use of the harvested rain water, you will need a spigot or hose bibb near the bottom. Although you can tap the hole or use PVC fittings, brass hose bibbs will self-thread into plastic barrels (be sure to use thread seal tape). Be sure to use one to which your garden hose will readily attach.
- **Optional hinges.** If you are harvesting water from a downspout, you can also cut half the remaining barrel top away and hinge it to provide access for a watering can. This set up allows multiple points of access to the water depending on your needs.
- **Barrel placement and elevation.** Water flows down-gradient so to have a truly sustainable set up (and not use a pump!), your barrel will need to be elevated. The area where the barrel is to be placed first needs to be leveled and clear of debris. A barrel on two 8 inch concrete blocks typically provides enough elevation to allow water to flow through a standard garden hose. Slope the blocks slightly away from the house and be sure barrel will be stable once it fills with water. A single large landscape paver placed on top of the blocks may help. A full 60-gallon rain barrel will weigh over 500 pounds and you do not want it to accidentally tip over.



Reminders on Operation and Maintenance

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Once established, your rain barrels require limited maintenance. Following are a few pointers to maintain their function and aesthetics.

- Check the level, elevation and stability of your barrels on a regular basis. You do not want them to be easily tipped over or to spill during a rain event.
- Food-grade barrels are typically white or blue. You may wish to paint them to better fit the aesthetics of your home and landscape. Spray paint which has been specifically designed for plastic should be used. Be aware that the paint may chip if you try to move a full barrel or if you happen to bump it.
- Mosquitoes are a potential problem any time water that is stored for a lengthy period of time. Be diligent in adding $\frac{1}{4}$ of a solid BT-based mosquito dunk to your barrels on a monthly basis during the warmer times of year. BT stands for *Bacillus thuringiensis*, a bacterium that kills mosquito larvae before they can become adults. It has been found to be safe for all mammals, birds and fish.



Web links

Like any web link – please use caution. None of these sources have been contacted nor has the information been verified.

<http://www.rain-barrel.net/>

<http://www.harvesth2o.com/>

<http://rainwaterharvesting.tamu.edu/>

City of Norman
Environmental Control Advisory Board

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- <http://www.watershedactivities.com/projects/spring/rainbarl.html>
- <http://www.youtube.com/watch?v=MGFDlkJOdaM>
- <http://www.dnr.state.md.us/ed/rainbarrel.html>
- www.mde.state.md.us/assets/document/water_cons/rainbarrel.pdf
- <http://www.swfwmd.state.fl.us/conservation/rainbarrel/make-a-rain-barrel.html>
- <http://www.younghouselove.com/2009/03/how-to-make-a-rain-barrel/>
- <http://www.diynetwork.com/how-to/how-to-build-a-rainbarrel-platform/index.html>
- <http://www.instructables.com/id/Need-Free-Water%3F--Build-a-Rain-Barrel/>
- <http://home.comcast.net/~leavesdance/rainbarrels/construction.html>
- <http://www.marc.org/environment/Water/buildrainbarrel.htm>
- www.portlandonline.com/shared/cfm/image.cfm?id=182095
- www.epa.gov/region3/p2/make-rainbarrel.pdf
- http://www.cityofbremerton.com/content/sw_makeyourownrainbarrel.html
- <http://www.hgtv.com/landscaping/rain-barrels/index.html>

Parts List

<p>All barrels will need:</p> <ol style="list-style-type: none"> 1. Spigot 2. Teflon Tape 3. Overflow Pipe (with optional hose fitting) 4. BT-based mosquito dunk 5. Platform to elevate (concrete blocks) 	<p>Downspout Barrels connected to a downspout will also need:</p> <ol style="list-style-type: none"> 1. Louvered grate 2. Hinges (if desired-to provide access for watering can) 	<p>Open barrel for valley Barrels placed under a roof valley will also need:</p> <ol style="list-style-type: none"> 1. Screen 2. barrel ring or bungee cord
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