

## HOW TO BUILD A RAIN BARREL

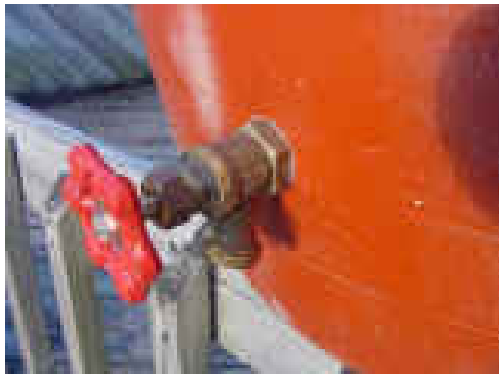
Rain barrels are a great way to reduce storm water runoff while saving water for use in the garden. Does your home have gutters and downspouts? If not, does a portion of your roof channel a stream of water off the roof? Lee County Extension recommends using a recycled, food grade, plastic barrel that is at least 55 gallons. Most have sealed tops to exclude mosquitoes while making it fairly easy to drill holes for the downspout, spigot and overflow outlets.



**Fig. 1:** Set the rain barrel on a firm base (hand-painted by Janet Keller, Cape Coral)



**Fig. 2:** Place the rain barrel where it can safely overflow and drain away from your home's foundation.



**Fig. 3:** A hole for a drain spigot (hose bibb) is drilled 8" above the bottom of the barrel.



**Fig. 4:** Two aluminum elbows direct water from a downspout into the top of rain barrel.

## TOOLS

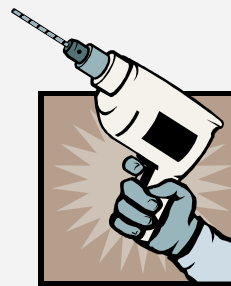
- Electric Drill
- Spade Drill bit 7/8-inch
- Saber or Jigsaw
- Marking pens
- Safety glasses
- 3/4-inch NPT Threading Tap
- Hacksaw or drywall saw

## INSTALLATION MATERIALS

- 3/4-inch Pea Gravel Drainage stone
- 2 or 4 16x8-inch concrete blocks
- One 24" square stepping stone or four 12" stepping stones

## MATERIALS

- 1 ea 55-gal barrel
- 1 ea 3/4" Plastic or Brass Hose Bibb
- 1 ea flexible plastic elbow or 2 aluminum elbows made to fit your downspout.
- 2 ea 3/4" threaded PVC plastic, 90° Elbows, threaded male on one end, female slip joint on other end. Used as overflow fittings on the sides of the barrel.
- 1/4-inch mesh Hardware Cloth or Plastic Window Screening



## SPECIFICATIONS

**Your plastic drum** or barrel should have carried only food products, cosmetics or cleaning products. Rinse well before using. Do NOT use barrels that contained petroleum, pesticide or toxic chemicals. Barrels that contained organic fertilizer products may also be useable. If the barrels previous use is not known, DO NOT use the barrel.

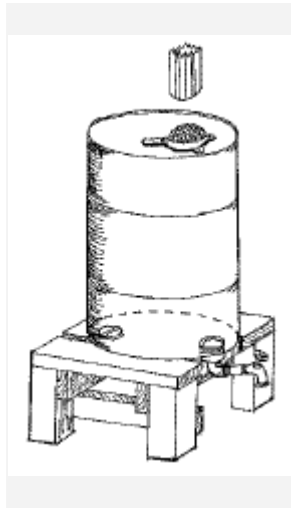
**When buying the aluminum elbows**, make a cardboard template to the size of the end of your downspouts. Take it with you to the hardware store to prevent purchasing the wrong size elbow for your home. Two different size elbows are commonly sold. They include, a 2"x3" elbow (called Elbow A) or a larger 3"x4" elbow.

**For barrels requiring a larger opening where no gutters exist**, wear safety goggles when using a jigsaw to cut a large hole out to the correct size desired. Occasionally, plastic barrels are sold with a separate, tight fitting lid..

**PAINTING your barrel is optional.** (1) Wash the exterior of the barrel with detergent and water. (2) Paint the barrel with KILZ 2 Primer Paint. This allows use of regular house paint, matching your house, as a color coat. You can also use any color of Krylon spray paint. (3) Decorate the sides of the barrel using acrylic craft or artist paint.

## INSTRUCTIONS

1. After selecting a barrel, wash out any remnants of food or juice. Clean the rain barrel by rinsing all surfaces (inside and out) with vinegar mixed with water or a mixture of 1/8 cup bleach in 5 gallons of water.
2. Using your downspout template, trace the outline for cutting a water inlet on the top of the barrel.
3. Drill a pilot hole using a large bit just inside the inner drawn circle. Using the saber or jig saw, follow the inner circle line until the shape of your downspout hole is removed. Remove the plastic that has fallen into the barrel.
4. To install the outlet or hose spigot, place the barrel on its side. Measure and mark 10" above the base of the barrel. The spigot hole should be on the side directly opposite from your inlet hole at the top of the barrel.
5. Drill a 7/8" hole at your mark (10" above the ground level) when the barrel is sitting on a solid base or platform.
6. Use a threading tap to create threads for screwing in the spigot. Be sure to hold the threading tap vertical, to insure the hole is straight rather than crooked. When properly threaded, no PVC cement is needed. Screw in spigot until it is snug and pointing downward.
7. To install two overflow outlets using 3/4" PVC plastic elbows, drill two 7/8" holes near the top of the left and right side of the barrel when facing the spigot. Use 90 degree elbows with one end male-threaded and the other a female slip joint.
8. Create a stone pad using 3/4-inch pea gravel or chip stone in the area designated for the rain barrel. This soilless pad allows any overflow water reaching the pad to quickly drain away leaving the pad dry on top. The stone pad gives you working space around the barrel as well.
9. Build a sturdy platform for the barrel making sure it is level when full. Concrete cement blocks work well. Set a large 24" x 24" concrete, stepping stone on top of the cement blocks. Check the top surface to make sure it is level.
10. Mark the downspout for cutting. Use a fine-toothed hacksaw blade (24 or 32 teeth/inch).
11. Connect two elbows and insert one into the bottom of the downspout. Insert the second aluminum elbow into the first and insert into the hole cut into the top of the barrel. Note: Be sure to adjust for the height of the barrel sitting on the cement block base before cutting the downspout. Disassemble the downspout if needed to finish the system. A water tight seal where the lower elbow enters the barrel is not desirable.
12. **(Optional)** Drill a hole for a bottom drain plug for maintenance.
13. **(Optional)** Use screens on gutters and downspouts to remove leaves, sediment and shingle particles as the water enters the barrel.
14. **(Optional)** Add aesthetic landscaping features leaving working space on three sides of the barrel.
15. **(Optional)** Add more barrels for storing more water during the dry season. Link barrels together with PVC pipes and fittings.



Mount your rain barrel **as high as practical** to use gravity to increase pressure. Use a brass nipple on the end of the spigot to connect a garden hose or irrigation coupler. Corrugated hose or plastic PVC pipes can be made to fit on one or both overflows.

**Connect two** or more barrels using a linking kit.

**One 55- gallon barrel would provide runoff storage from a rooftop area of approximately 215 square feet with a 0.5-inch rainfall.**

## NOTES

- ❖ Barrels with open tops present a safety hazard for children. Be sure to fasten hardware cloth (screening with holes no larger than 3/8" wide) securely to the frame of the barrel.
- ❖ While rainwater harvesting systems are largely unregulated in many areas, local health, plumbing codes or regulations may apply.
- ❖ This basic rain water collection system uses materials sold locally for less than \$50. This handout is intended for novices. No specialized construction or plumbing tools are needed. The components added to each barrel are easily found and purchased at retail hardware stores or building material suppliers. Contact the Lee County Extension Service for a Rain Barrel Resource List.
- ❖ Plumbing and gutter contractors interested in the environment are also starting to specialize in whole home rain water catchment systems. Contact the Lee County Extension Office for a list of several professional water catchment system firms to assist you in setting up the system at your home.
- ❖ Rain barrels kits using wood, plastic or metal are not available locally, at the present time. Kits are available on-line. Barrel capacity varies. Check with the manufacturer on the price and shipping cost.

*This workshop was a grant-funded project by SFWMD for the Town of Ft Myers Beach. For more information on other locally available classes and workshops, contact the Lee County Florida Yard and Neighborhood program at 239 533.7515. **Prepared by** Thomas Becker, Extension Agent, Lee County Extension Service, 6-4-08.*