

HARVESTING RAINWATER

STEP BY STEP RAIN BARREL INSTALLATION



Installed Rain Barrel (has not been elevated)

2. Create stable base for rain barrel

Remove rocks, grass, and other vegetation in area for base. Level the soil. Use 2" layer of leveling sand if necessary. Most rain barrels require a "hydraulic head" (spigot) for ease of irrigation and to make it easier to fill buckets and watering cans. To elevate barrel, place cinder blocks on the leveled base and check if base is still level and stable. Place two blocks side by side and then stack two more in the opposite direction. Stack each of the blocks with openings inward, so children cannot climb blocks (Figure 1).

To create a more attractive base, use a retaining wall of blocks or custom build a base with timber or other materials.

3. Cut Downspout

Place rain barrel on top of stacked cinder blocks to estimate height of connection point. Mark downspout approximately 12 inches above the top of the barrel. Cut downspout with hacksaw (Figure 1).

4. Attach downspout connectors

Downspout height above barrel entry screen should be adjusted so low flow events can drip into the barrel and high flow events will not gush over the barrel edge. Downspout connectors may need to be purchased or repurposed from pieces of downspout removed.

5. Connect overflow hose

If an existing drainage system exists, connect a length of garden hose to the overflow spigot on the barrel and connect the other end to the existing system. If an existing drainage system does not exist, the overflow should be directed away from the building, so standing water is not encouraged. Either connect a length of standard garden hose and direct it away from the building, or connect a soaker hose and direct it into planting beds or lawn.

Overflow water can also be directed to another rain barrel. Simply connect overflow from first barrel to overflow of second barrel. Add additional overflow connection to second barrel and follow Step 6.

6. Attach support strap

Attach an eye hook to a secure, stable part of a solid post or wall (Figure 2). Wrap support strap around rain barrel and attach it to eye hook. This safety step prevents the rain barrel from tipping.

MATERIALS AND TOOLS NEEDED PER RAIN BARREL:

Installation requires about one hour using simple tools

- Rain barrel
- Cinder blocks (4)
- Downspout connector
- Overflow connector
- Support Strap (1)
- Eye hook (1-2)
- Hacksaw and blades

A step-by-step process was developed to help centers achieve success with rainwater harvesting as detailed below, in steps 1 through 8.

1. Identify

Identify which downspouts can be connected and the number of rain barrels needed. Rain barrels can be interconnected as desired. If multiples are required, consider a single large cistern. These are available in a variety of sizes from agricultural suppliers and other sources.

7. Educate staff, parents and children

Staff, parents, and children should be educated about the benefits of collecting rainwater and provided with information about how to install their own rain barrels at home. Rain barrel installation can be treated as a workshop and used as a means to enlist the help of others and to educate them about the installation and benefits of rain harvesting.

8. Utilize Rainwater

Attach a small length of hose to the outflow spigot to make filling watering buckets and cans easier. Water plants periodically with the collected water. It is important to bring the rain water back to the soil often. Doseify the usage in periods of drought. Young children love to water (Figure 3).

Other Resources

The **Rainwater Harvester Model** developed by NC State University's Department of Biological and Agricultural Engineering Stormwater Team, was used to determine the water storage volume required to meet water usage requirements. User guide available at <http://www.bae.ncsu.edu/topic/waterharvesting/>.

The Centre for Science and Environment

<http://www.rainwaterharvesting.org/>

Rainwater Harvesting Guide

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

HarvestH2O

<http://www.harvesth2o.com>



Figure 1. (Left) Elevate barrel and cut downspout

Figure 2. (Top right) Strap to building structure, fill watering can with rainwater

Figure 3. (Bottom right) Have fun using the rainwater to water plants, wash cars, etc.



Harvesting Rain Water: Rain Barrel Information Sheet

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Creating environments for healthy human development and a healthy biosphere for generations to come.

The purpose of the Natural Learning Initiative is to promote the importance of the natural environment in the daily experience of all children, through environmental design, action research, education, and dissemination of information.

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