

Rain Barrel

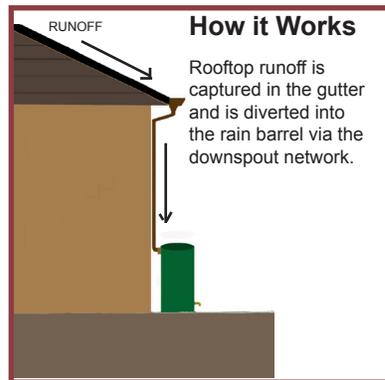
PURPOSE: Rain barrels reduce the amount of stormwater runoff flowing to an area by collecting roof runoff and storing the water for future use.

Rain barrels are an effective means of capturing and storing runoff collected from roofs of any size and function (commercial or residential). Manufactured containers range from units as small as 20 gallons to units capable of holding 600 gallons. Cisterns and polymer storage units with pumps are other types of storage that function the same as rain barrels.

The rain barrel is placed near a roof downspout outlet on a base of compacted dirt, pre-treated wood, or a concrete pad. The barrel is then connected to the downspout by a section of elbow pipe. Runoff is diverted into the rain barrel via the downspout.

Units specifically designed to function as rain barrels feature a cover for preventing animals, mosquitoes, dust, and light from contaminating stored water. A drain valve located near the base of the barrel releases collected runoff that can be used to water gardens or wash cars, reducing the consumption of tap water for this purpose. Some models include a mesh screen near the intake trough for filtering leaves and other rooftop debris. Rain barrels should feature a diverter that allows large quantities of runoff to bypass the unit during major storm events. Some units are designed to be connected in a series to increase capacity.

NOTE: Water collected in a rain barrel contains pollutants and is unfit for human consumption.



Benefits and Uses

- Cost-effective alternative to using tap water for watering yards and gardens
- Reduces peak volume and velocity of stormwater runoff to streams and storm sewer systems
- Helps to reduce peak water demand during summer months
- Applicable to all types of sites (residential/commercial/industrial)
- Takes advantage of already existing source of fresh rainwater
- Inexpensive to install and maintain

Additional Resources

PA Department of Environmental Protection
www.depweb.state.pa.us - search Pennsylvania Stormwater Best Management Practices Manual

US Environmental Protection Agency
www.epa.gov

Chesapeake Bay Foundation
www.cbf.org

Low Impact Development Center
- www.lid-stormwater.net - click on Site Map and select Rain Barrels and Cisterns
- www.lowimpactdevelopment.org

Maryland Department of Natural Resources
www.dnr.state.md.us/ed/rainbarrel.html

Stormwater Manager's Resource Center
www.stormwatercenter.net

Rain Barrel Guide Online
www.rainbarrelguide.com

General Design Considerations

- Calculate roof area to select rain barrel size to accommodate runoff volume
- During winter, open drain valve or disconnect system to prevent stored water from ice expansion, which could damage the container
- Position the rain barrel close to the downspout, where land slopes away from the foundation
- Collected water must be used or discharged before the next storm event unless a diverted unit is installed to allow excess water to bypass the unit
- Do not connect rain barrel system to any drinking water system
- Pipes or storage units should be marked "Caution: Do Not Drink"
- First flush runoff may be diverted away from storage to minimize sediment
- Storage tank should be protected from direct sunlight to minimize algae growth
- Cover should fit tight
- Unit should include a diverter to allow excess stormwater to bypass the rain barrel
- Containers should be flushed periodically to remove sediment
- Keep lid closed to reduce evaporation and prevent mosquito breeding