Addressing Roof Runoff

Did you know?

850 gallons of water come off a 1,500 sq. ft. roof during a 1" rainstorm. Rain barrels, dry wells, dripline trenches, and rain gardens are all ways to address roof runoff.

Rain Garden

Rain gardens are bowl-shaped gardens that collect and absorb rain water. They can be used at gutter downspouts and other places where large quantities of concentrated water flows off rooftops.

Materials List

- Possible soil amendments
- Native plants that can tolerate fluctuations in soil moisture
- Erosion control mix

Installation

1. **Select a location** at least 10' downslope from existing structures yet above the seasonal high groundwater table. Direct rainwater into garden using a grassy swale, stone trench, or gutter extension.
2. **Size the garden** to be a third of the area being treated. Calculate square feet of treatment area and multiply by 0.3. For example, a 1,000 sq. ft. roof will require a 300 sq. ft. garden.
3. **Call DigSafe** at 811 to avoid underground utilities.
4. **Do a percolation test** (see soil drainage factsheet for instructions). Amend soil if needed to improve drainage.
5. **Dig a bowl-shaped, shallow, flat-bottomed hole** with gradually sloping sides between 4" to 6" deep. Create a berm on the downhill side of the garden using excavated material.
6. **Plant and cover any bare soil** with erosion control mix.

Maintenance

- **First Year:** Water deeply each week, allowing plant roots to establish deep into the soil.
- **After First Year:** Only water during extended periods of drought. Weed and divide plants as needed. Replace mulch as needed.

Your rain garden doesn't need fertilizer! Using fertilizer adds unnecessary nutrients and reduces the ability for the garden to effectively remove pollution from stormwater runoff.

Plant Recommendations

Select native plants that can tolerate fluctuations in soil moisture with water-tolerant plants planted in the center of the garden and drought-tolerant plants planted around the outer edge.

If you have gutters consider using rain barrels and/or rain gardens.

If you don't have gutters, use dripline trenches.

CUMBERLAND COUNTY SOIL & WATER CONSERVATION DISTRICT

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Rain Barrels

Gutters and downspouts direct rainwater into rain barrels to capture and store rainwater from your roof that would otherwise run off your property and pick up pollutants along the way.

Materials List

- Gutters and downspout or rain chain
- Barrels with screen and spigot (can be purchased from the Cumberland County Soil & Water Conservation District)
- Blocks or lumber
- Connector hose to chain multiple barrels together

Installation

1. Use crushed stone or mulch to **level the ground** where the rain barrel(s) will go. Multiple rain barrels can be connected together to hold more water.
2. **Place the barrel on blocks or lumber** to allow room for a faucet or spigot on the lower drain.
3. **Connect the hose to slowly release the water** into a garden or allow it to soak into the ground; the higher the barrel is, the more flow and pressure through the hose.
4. **Install a screen cover** to prevent debris clogging the spigot and insects from breeding in the water.

Maintenance

- Use your rainwater between rain events so the barrel doesn't overflow.
- After each storm, remove leaves or other debris that may plug the screen.
- Clear gutters and downspouts of debris on a regular basis.
- To prepare for winter, drain and store the rain barrel indoors or turn it upside down and anchor it with something heavy if storing outside. Detach or cover the faucet/spigot so it isn't broken off.

Dripline Trench

A dripline trench, also called a infiltration trench, collects runoff from a roof **without gutters** and prevents erosion along your foundation. Dripline trenches work best in sand and gravel soils and should not be used next to structures with improperly sealed foundations, as flooding may occur.

Materials List

- ½" to 1½" washed crushed stone
- Non-woven geotextile fabric

Installation

1. **Dig a trench** 18" wide and at least 8" deep along the drip line. Slope the bottom away from the house so that water will drain away from the foundation. Dispose of the soil in a flat area where it will not wash away.
2. Line the sides of the trench with **non-woven geotextile** fabric and fill to within 3" of the ground level with **crushed stone.**
3. Fold a flap of the fabric over the stone, then fill the trench with the remaining stone.

Maintenance

- Periodically remove accumulated debris and weeds from the stone.
- Every few years, or when the trench is draining slowly, remove the stone to clean and dispose of accumulated debris and sediment.