



Rain Gardens

Rain gardens are attractive, landscaped areas planted with perennial native plants which don't mind getting "wet feet". Built in a shallow depression, the gardens are designed to increase infiltration allowing rain and snowmelt to seep naturally into the ground. Benefits of rain gardens are multiple: they recharge groundwater supply, prevent water quality problems, provide habitat for birds and butterflies, and are great looking landscape features.

History of the Rain Garden

Rain gardens were first used in Maryland in the early 1990s to address pollution that was threatening the Chesapeake Bay. They were developed based on the idea of the bioretention basin. These basins were initially designed as a Best Management Practice (BMP) to minimize the impacts of development and storm water runoff. Bioretention basins are depressions which collect and hold storm water runoff. Slowing the flow of surface runoff allows time for pollutants to break down or settle out of the water before it slowly continues its flow to the nearest river or lake.

While detention basins are primarily used to contain water from a substantial drainage area, rain gardens are designed for use on smaller, residential lots, giving the homeowner the ability to reduce the amount of storm water runoff that flows from the yard.

Why Do We Need Rain Gardens?

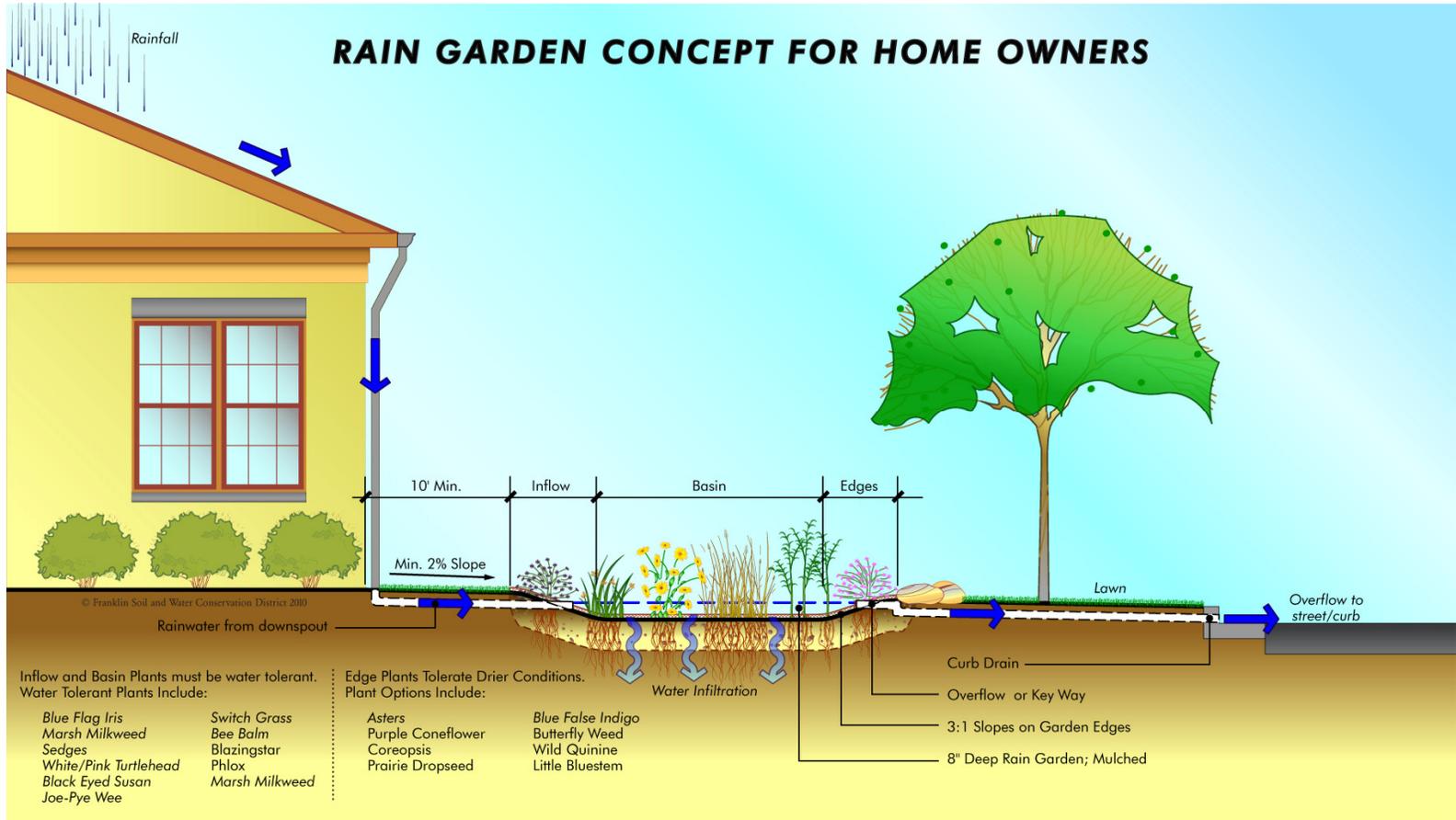
As development increases, the ability of our environment to perform its natural processes decreases. This is because the natural landscape that was once able to absorb and clean storm water is covered by impervious surfaces. Impervious surfaces are simply surfaces that water is unable to penetrate, such as roads, rooftops, and driveways.

Increased impervious surfaces result in an increased amount of storm water runoff and an increased chance for pollution to enter our waterways through our storm sewer systems. Pollution that results from storm water runoff is called nonpoint source pollution. Studies have shown that up to 70% of the pollution in our streams, rivers and lakes is carried there by runoff from practices we carry out in our own yards and gardens! Some of the common nonpoint source pollutants from our yards that end up in our local waterways include soil, fertilizers, pet wastes, grass clippings and other yard debris. Installing a rain garden may seem like a small thing, but if you calculate the amount of rain that runs off one lot, you might be surprised. Rain gardens capture the rain that usually runs off our property and allow it to soak into the ground. This helps minimize runoff and reduces the amount of nonpoint source pollution that enters our waterways. Rain gardens help our communities "bloom" making them more attractive places to live while maintaining watershed health.

Diverting Downspouts to Create a Rain Garden

Water from gutters is often diverted down a driveway or a spot near the corner of a house. You do need to make sure the water is directed away from the foundation of your home but instead of running it to the nearest storm sewer, a rain garden can be constructed. A rain garden basically consists of a depressed area that allows runoff to pond and percolate into the soil. A stand of various wildflowers, grasses, shrubs, and small trees is established to promote evapotranspiration, maintain soil porosity, encourage biological activity, and promote uptake of some pollutants. Runoff infiltrates through the soil, providing the treatment. There are several variations in design; the rain garden pictured on the following page functions by directing the downspouts to the garden, and keeping part of the downspout in place to act as an overflow in times of very heavy rain. Once in the garden, the plants uptake the retained water and nutrients and filter out pollutants. These areas can be an attractive feature while protecting stream water quality. When setting up the downspout to go into a rain garden, be sure that the pipe slopes "downhill" from the home or structure into the garden. Disconnecting the downspout should be the last step in a rain garden installation.

RAIN GARDEN CONCEPT FOR HOME OWNERS



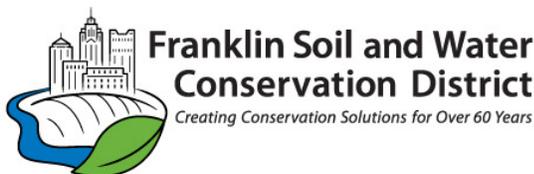
Design and Construction

Rain gardens work best in small to medium sized drainage areas. If the slope is over 5-10% a berm may be needed to hold runoff in the rain garden basin. The area is excavated to a depth of 6-10 inches (depending on the drainage area and soil percolation test) and the soil should be tilled about 6-12 inches to loosen the subsoil and allow for easier planting. An overflow is put in place to carry any excess water from a very heavy rain it to an appropriate outlet such as a storm drain or ditch. The inflow and overflow pipes are usually covered with a 4-10 inch layer of pea gravel or fist-sized stones to help disperse and slow the flow of water. Adding a 2-3 inch layer of compost is recommended to provide the soil with nutrients (since the nutrient-rich top soil was excavated out) and to improve infiltration. The rain garden is then planted with native, non-invasive plants able to withstand both drought and periodic flooding of their root systems. A layer of double or triple shredded hardwood mulch 2 inches thick will serve to further filter the incoming water, help keep moisture in, provide biotic breakdown of contaminants, and provide a weed barrier. The final depth of the rain garden will be between 4-8 inches deep after the compost and mulch layers have settled from the first couple rains.

Resources:

Central Ohio Rain Garden Initiative—www.centralohioraingardens.org
 Toledo-Lucas County Rain Garden Initiative—www.raingardeninitiative.org
 Greater Cincinnati Rain Garden Alliance—www.millcreekwatershed.org/rain-gardens.html
 Geauga Soil and Water Conservation District—www.geugaswcd.org

District projects and programs are offered on a non-discriminatory basis.



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