Rain Gardens

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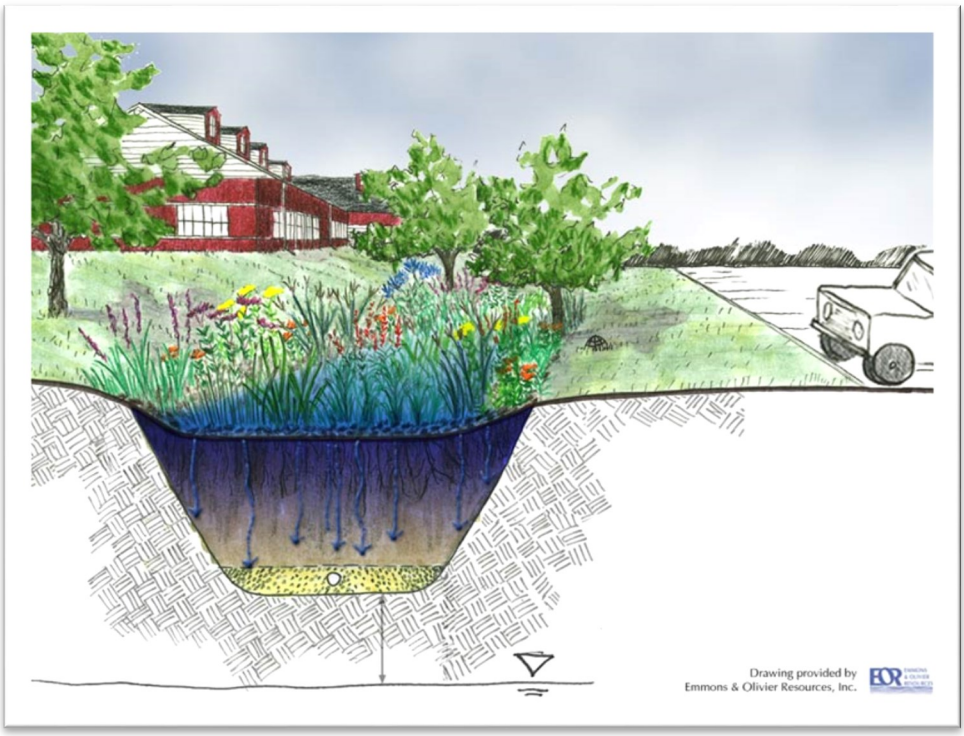
3/10/2015

Rain gardens are depressions that hold water for a short period of time these are increasingly popular with homeowners, municipalities and are mandatory for many commercial businesses. They catch storm water runoff from sidewalks, parking lots, roads, and roofs and typically have some kind of vegetation planted in them. Not only do rain gardens slow water down to give it time to soak into the ground and be used by plants, but they also filter out sediment and chemical pollutants.



Communities are now being more aggressive in using these rain gardens to catch runoff water before it enter streams. This technique has been used in agriculture for many years to help reduce soil runoff, fertilizer runoff and chemical runoff from entering water systems. The main principle is to use vegetation to slow the water down so the sediment settles out and allowing the water to infiltrate into the soil. Once the water enters into the soil it can be used by plants or to help recharge aquifers which can eventually provide late summer stream flow in some cases, which benefits the whole riparian area plants and animals.

Some potential opportunities to look at is as simple as directing the water into these rain garden areas instead of down the rain gutters to the streets. Such as sloping the sidewalks towards grass areas. Parking lots can direct the water towards planting areas, which the water can then benefit the plants and most of the excess water can be allowed to infiltrate into the ground. By directing water from the roof to a series of depressions and planting fruit trees in these depressions would result in less household water being used and the extra water would be appreciated by the fruit trees.

Several things need to be taken into account when constructing such devices such as the soil type and it needs to be permeable, such as if there is a high percentage of clay, this needs to be amended or replaced to allow better permeability. Make sure these rain gardens are not too close to the house and the slope is also away from structures. There are also products that have been developed to help with allowing water to penetrate into the ground versus allowing it to run off a hard surface area. Such as permeable concrete sidewalks and permeable asphalt. These specialty products are quite interesting and sometimes need some additional engineering to stand up to heavy traffic. Pavers can be used for sidewalks or parking areas. Another product available is a plastic grate system which can be placed down and either filled with recycled glass, or gravel (the grate system keeps the material from moving around and offers some structural support) or it can be filled with sod. The sod areas offer temporary parking for vehicles to drive over particularly and when wet and these grate systems gives enough structure so the vehicles do not leave tracks. These sod areas can be managed just like a lawn, but offer more uses.

The use of specific plant materials for these rain garden areas will depend on your location, climate and personal aesthetics. It does get a little more complicated as far as plant selection and design concerns come in as to how much potential water will the area receive and how long will potential water stand in the area. These questions will determine the plant selections needed and the design of the rain garden area. Most home rain gardens are only 6 inches deep and a third the size of a roof or less.

The other item that is being looked at from a research stand point is adding material to the soil which will absorb or hold chemicals, such as activated charcoal, and some new products such as biochar (which is a product developed from organic matter such as poultry waists, and it is better at absorbing chemicals than charcoal). Most of us that have had aquariums know that using activated charcoal takes out unwanted chemicals out of the water.

So if you are interested in cleaning up our surface waters and adding water back to our dry soils then think about installing rain gardens or directing rainwater to vegetative areas first before it enters the storm drains.