

## Infiltrating a Rain Garden

One inexpensive and delightful way to add interest to your landscape while helping the environment and scoring green building points is to add a rain garden to your landscape plans. This is an on-site storm water retention system that collects and stores the water from your roof and other impervious surfaces and uses it to create an artificial wetland. This is not a pond, and if properly established and maintained it will not breed mosquitoes but will look like a little wetland area in your yard with tall marsh grasses and sedges, perhaps some cat-tails and other water tolerant plantings. It will attract wildlife and provide visual relief in dry times as well as the rest of the year.

These systems earn “green points” in most green building programs because they minimize the need for irrigation, and also because they keep storm water from leaving your property and contributing to flooding and to washing surface pollution and nutrients into local creeks and streams. By reducing run-off you can help minimize stream siltation and reduce water pollution. It’s good for the planet and creates a beautiful and low cost amenity in your yard.

When we first started installing these systems in our homes we simply dug a big ditch or pond and lined the bottom with a foot or so of washed gravel, trenched all the gutter drains and French drains into the gravel, and then topped it off with compost, top soil and shredded bark. Our septic contractor generally does our gutter trenching and final grading so it was natural to have him do our rain garden installations. We often use “innovative” septic systems to improve the performance of our septic fields through the use of underground absorption chambers in order to reduce the overall footprint of the septic area on the lot. It makes sense to apply this technology to rain gardens to maximize their ability to retain water during a torrential rain event.

At least 60% of the rain garden storage area is taken up by the stone that holds the soil off the bottom of the pond. So a typical rain garden that will contain six cubic yards of gravel and four yards of topsoil and four yards of bark mulch should be able to retain 5 cubic yards or 135 cubic feet of storm water. Adding 5 infiltrator chambers at 10 cubic feet each adds 50 cubic feet and helps accelerate the water absorption. Because the water rises into the overlying soil and gravel from below it doesn’t compact the soil and it is absorbed more quickly and completely. Adding bark mulch to the soil mix helps the soil to float up off the gravel during a torrential down pour which “fluffs” the soil and further increases its ability to hold water.



This is an “**Infiltrator**”. It’s a plastic arch about three feet wide and four feet long, it holds about 30 gallons of water and has gilled slits on the side of the ribs that releases the water to the rain garden. In this application we used five of them at \$25.00 each to create an underground water storage chamber roughly 20 feet long.

# Green Building

construction details

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There is a movement afoot to use rain garden type artificial wetlands as filtration systems for swimming pools that don't rely on chlorine for water purification but still have fiberglass or concrete bottoms and are finished more like a landscape feature than a swimming pool. Given the water shortage it seems that a swimming pool that used a rain garden to harvest storm water off the homes roof and used it to fill and replenish a swimming pool would be a natural fit. The key is to keep the collection system below the pool so that it can overflow during a downpour without negatively impacting the water quality in the pool. The same pumping system that would be used to move water from the rain garden to the pool filter could also be used to move water to an irrigation system for landscaping or for a roof top garden or even a radiant slab cooling system.



The infiltrator chambers are set into a level, flat bottomed trench dug into the bottom of the rain garden area. A berm is created to channel surface run-off into the area and 4" slotted drain tiles are used to carry gutter run-off to the infiltrators.

The Infiltrator chambers have articulated joints that allow them to bend to conform to the landscape as they are assembled.



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The chambers and pipe are bedded in washed stone which adds to their load bearing capacity. You still won't be able to park a car on it, but you will be able to build a dry-stack stone wall on it to retain soil and provide water for a terraced garden.



Once the drain pipes are connected to the gutter drain collection system the gravel gets consolidated and it's ready to be topped out with four inches of good soil, compost, bark mulch and water loving plants.