

August 2009

## Rain Gardens: The Good, The Bad, and The Ugly

Rain gardens are all the rage these days. People seem to love them or hate them, but often their perspective is based on having seen attractive rain gardens – or the opposite. The decision to incorporate rain gardens into land development is best based on a full understanding of what they are, when they are beneficial, and how to make them effective and appealing.



Rain gardens can be a visually appealing way to maintain water quality in both residential (left) and commercial (right) settings.

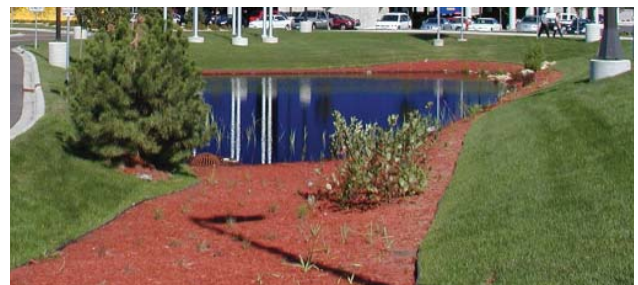
A rain garden is a plant-filled depression used for stormwater management. It is one example of the Low Impact Development techniques profiled in last month's TOPICS. A rain garden can function either as an infiltration basin, where the runoff soaks into well-drained native soil, or as a filtration basin, in which engineered soil and drain tile are used. Because runoff to the rain garden drains within 48-72 hours, a properly designed rain garden does not promote mosquito breeding.

Rain gardens have become more common in stormwater management as water quality concerns have increased. They reduce the levels of solids and nutrients (such as phosphorus) that reach surface waters, lower water temperature, and recharge groundwater while reducing erosion and flooding. Rain gardens are especially beneficial when water quality treatment needs to occur in a visible location. They can be installed in a variety of settings including parking lots, single-family homes, and as part of the landscaping around commercial and institutional projects.

Rain gardens do have drawbacks. They generally cannot accommodate drainage areas larger than 1-2 acres. As discussed last month, their cost-effectiveness can depend on land availability and characteristics. The factors that render rain gardens ineffective or unattractive may include: placement in inappropriate locations or other design flaws; compaction of the soil by construction or maintenance equipment; filling of the depression with sediment; and failure to remove undesirable plants during the first couple of years.

Some tips for successful integration of rain gardens into a project are as follows:

- Runoff should be directed to a depression that can accommodate a water depth of about 15".
- Sediment traps are important for avoiding siltation, which blocks infiltration.
- Protecting rain gardens with fencing during construction helps prevent compaction and sedimentation.

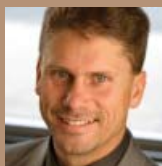
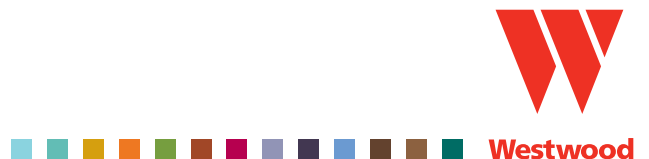


When not properly designed, installed, and maintained, rain gardens can become eyesores (top) or stop functioning (bottom). A sediment layer prevents runoff from soaking into the rain garden in the bottom photo.

- Plants should be selected for ability to survive short periods of inundation, placed in groups to minimize takeover by aggressive species, and installed from plugs or pots rather than seeds, which wash away.
- Some annual maintenance is needed to remove sediment from inlets and undesirable plants.
- The project team should have experience gaining the necessary approvals.

Rain gardens can be a cost-effective tool for stormwater management and an aesthetically appealing part of the landscape. Proper design, installation, and maintenance will ensure that the rain gardens in your next project are considered examples of good ones, not the bad and the ugly.

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