



# Green Infrastructure & Stormwater Management CASE STUDY

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## Adams Farm Neighborhood: Rain Garden

**Location:** Greensboro, NC

**Client:** Dave and Nancy Seay

**Design Firm(s):** Seay Partners, Inc.

**Landscape architect/Project contact:** Nancy Seay, ASLA

**Email:** [seaywhat7@aol.com](mailto:seaywhat7@aol.com)

**ASLA Chapter:** North Carolina

### Project Specifications

**Project Description:** In an effort to remedy a continuing erosion problem between small lots where substantial stormwater traveled that had collected from impervious surfaces such as roofs and driveways, Seay Partners designed a small rain garden to allow for water infiltration into the subsoil and added rain barrels at two downspouts. Houses are close together in this neighborhood and it was imperative that the neighboring homeowner was in agreement with the plan since much of his rainwater from gutters and overland flow would drain into the project as well. Once the rain garden was installed, it slowed the runoff and concentrated it for use by many native plants, using plant recommendations from North Carolina State University Biological and Agricultural Engineering Department. Now instead of an erosion eyesore, even in the first year, the homeowners enjoy a lush garden with a great variety of plants, birds, butterflies and hopefully frogs!

#### Project Type:

Single family residential

A retrofit of an existing property

**Design features:** Rain garden and rain barrels.

**This project was designed to meet the following specific requirements or mandates:**

Developer/client preference

**Impervious area managed:** less than 5,000 sq/ft

**Amount of existing green space/open space conserved or preserved for managing stormwater on site:** less than 5,000 sq/ft

**The regulatory environment and regulator was** supportive of the project.

**Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements?** Property value enhancement was a consideration. The side yard prior to construction was a distraction from the house's value. With the rain garden and drainage problems resolved and an attractive garden in its place, it will be perceived as an increase in value to the home.

## Cost & Jobs Analysis

**Estimated Cost of Stormwater Project:** <\$10,000 (Public funding: None)

**Related Information:** Design costs are approximately \$1000. Materials cost was approximately \$1000. Labor costs would be approximately \$1000. This is a relatively low cost project that many homeowners could afford. It would make a large difference in a region's stormwater management if these practices are widely adopted.

**Was a green vs. grey cost analysis performed?** No

**Number of jobs created:** 1

**Job hours devoted to project:**

Planning and Design: 20

Construction: 30

Annual Maintenance: 8

## Performance Measures

**Stormwater reduction performance analysis:**

The subsoil as tested prior to construction drained at 1-gallon per hour when soil was dry. After saturation, the soil drained at 1 gallon per 5 hours. The rain garden will hold approximately 50 gallons as tested by filling with a rain barrel holding 50 gallons. The amount of water detained (or retained) until infiltrated would be up to 100 gallons within the first 6 hours of a storm from a roughly 2,000 sq/ft impervious area comprised of the two house's roof area and the owners driveway. In addition, the 2 rain barrels hold another 50 gallons each.

**Community & economic benefits that have resulted from the project:** If this strategy was applied to other properties within the community, the various individual properties would see an increase in value. But the more important consideration is the accumulated reduction in water being directed into the streams and stormwater system. Water quality would be improved, the groundwater would be increasingly recharged and there would be less erosion that has been stripping the community of topsoil and depositing it in the community's lake. The lake needed to

be dredged 2 years ago at a significant cost to the community. With less erosion and siltation into the lake, the amount of time would be increased between these environmentally devastating events. The lake had to be drained to accomplish the dredging so of course a lot of fish and other species perished.