



Green Infrastructure & Stormwater Management CASE STUDY

Rain Garden Program at the Village Elementary School

Location: Holmdel, NJ

Client: Monmouth County, NJ (Turner Shell), Holmdel Board of Education (Bill Balicki, Brian Shillaci), Holmdel Township Environmental Commission (Chris Yonclas, Pat Soscia)

Design Firm(s): Rutgers Cooperative Extension Water Resources Program

Landscape architect/Project contact: Jeremiah Bergstrom, LLA, ASLA

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ASLA Chapter: New Jersey



Photo: Holmdel TWP. Public School District

Project Specifications

Project Description: A series of four (4) rain gardens were designed and constructed in an interior courtyard at Village Elementary School in Holmdel, New Jersey as part of a watershed implementation plan for the Ramanessin Brook Watershed. The project partners and design team proposed to transform the space into an outdoor learning center functioning as a stormwater best management practice (BMP). This stormwater BMP treats runoff from 10,000 sq/ft of surrounding rooftop with the purpose of improving water quality and reducing runoff

volume from the site. The entire 18,000 sq/ft courtyard was renovated as part of the design, which included removal of 5,000 sq/ft of impervious asphalt.

Engaging the school staff and students into the project was critical to its success. Each of the Pre-K through 3rd grade classes at the school learned about watersheds, stormwater, and the impact human activities have on water quality. Under the direction of landscape architects, designers, environmental professionals, and volunteers, each student had the opportunity to install at least one native plant in one of the four rain gardens. In total, over 800 students participated in the educational activity over a three-day period.

Project Type:

Institutional/education

A retrofit of an existing property

Design features: Bioretention facility, rain garden, rain barrels, and downspout removal.

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

State statute

Impervious area managed: 5,000 sq/ft to 1 acre

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 5,000 sq/ft to 1 acre

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? Not applicable.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: Federal, state)

Was a green vs. grey cost analysis performed? No

Cost impact of conserving green/open space to the overall costs of the site design/development project: Not applicable

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Did not influence costs.

Number of jobs created: None

Job hours devoted to project:

Planning and Design: 320

Construction: 120

Annual Maintenance: Not applicable

Performance Measures**Stormwater reduction performance analysis:**

100% of the NJ Water Quality Design Storm (1.25" over 2 hours)

Community & economic benefits that have resulted from the project: The school now revels in having a “park oasis” within its walls providing seasonal interest, beauty, and opportunities for enriched learning experiences. The courtyard design includes outdoor educational gathering areas, a rain barrel, canopy trees, and four rain gardens. Each rain garden consists of an individualized palette of native plant species, which provides animal habitat and aesthetic interest during each specific season of the year. The “Winter” rain garden contains species with winter seeds, berries, and bark; the “Spring” rain garden is planted as a wildflower meadow; the “Summer” rain garden provides butterfly habitat; and the “Fall” rain garden consists of native warm season grasses and autumn blooming forbs.

Project Recognition

NJASLA Environmental Enhancement Award 2011; NJ AWRA “Excellence in Water Resources Protection and Planning Award” Stormwater Management Project 2010

Additional Information**Links to images:**

<http://nsawra.onefireplace.org/resources/documents/village%20school%20project%20handout.pdf>

http://independent.gmnews.com/news/2010-10-07/Front_Page/At_Village_School_rain_gardens_flourish.html