Green Infrastructure & Stormwater Management CASE STUDY

Episcopal High School Stormwater Rain Garden

Location: Baton Rouge, LA
Client: Episcopal High School
Design Firm(s): BROWN+DANOS landdesign, inc.
Landscape architect/Project contact: Chad D. Danos, ASLA
Email: cdanos@browndanos.com
ASLA Chapter: Louisiana

Project Specifications

Project Description: The school's quadrangle experienced flooding problems caused by an inadequate drainage system. BROWN+DANOS designed bioswales and a rain garden to capture the first 1" of rainfall to slow down the impact to the storm drain system. In an effort to quickly and economically implement the project because of lack of experience in the local market place, BROWN+DANOS employed approximately 20 landscape architecture students over the summer to implement the project as a demonstration and learning example. Two years following the implementation, the quadrangle has yet to experience flooding problems.

Project Type:
Institutional/education
A retrofit of an existing property

Design features: Bioretention facility, rain garden, bioswale, cistern, and porous pavers.

This project was designed to meet the following specific requirements or mandates:
Local ordinance - we also wrote the local stormwater guidelines

Impervious area managed: 1 acre to 5 acres

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? No.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $100,000-$500,000 (Public funding: Not available)

Related Information: Of the $110,000 project approximately 40% was materials.

Was a green vs. grey cost analysis performed? Yes, we implemented the cost (design and build) for approximately $110,000.00 while estimates from engineers for re-piping was nearly $500,000.

Cost impact of conserving green/open space to the overall costs of the site design/development project: Less cost in materials / infrastructure.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Significantly reduced costs (10% or greater savings).

Number of jobs created: 20

Job hours devoted to project:

Planning and Design: 400
Construction: 4,000
Annual Maintenance: 400

Performance Measures

Stormwater reduction performance analysis:
The Raingarden retained 39% of the 10-year, 1-hour rainfall of the watershed.

Community & economic benefits that have resulted from the project: The school now uses the raingarden as part of its environmental education curriculum.

Project Recognition

Merit Award; Louisiana Chapter