Green Infrastructure & Stormwater Management CASE STUDY

Blackwell Urban Stream Research Center

Location: Warrenville, IL
Client: Forest Preserve District DuPage County - Office of Natural Resources / Citizens of DuPage County
Design Firm(s): Williams Architects, WBK & Associates, FPPDC Office of Planning, DuPage County DCEDP
Landscape architect/Project contact: Kevin Horsfall, ASLA
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ASLA Chapter: Illinois

Project Specifications

Project Description: The Urban Stream Research Center will facilitate re-introduction and augmentation of native freshwater mussels and fish species that were historically abundant in the Des Plaines River watershed. The research and educational facility will be staffed by

District employees and used for bioassessments for the Aquatic Monitoring and Research. “Open House Days” will allow the public to learn about urban streams, explore aquatic and floodplain restoration programs and demonstrate the influence residents have on their local watersheds and water quality. Rain barrels, permeable paving, rain gardens, bioswales, vegetated swales and wetland detention will help illustrate relevant and functioning best management practices for improving water quality.

Project Type:
Urban stream research center
Part of a new development

Design features: Rain garden, bioswale, rain barrels, porous pavers, curb cuts, constructed wetland, and native vegetative filterstrips.

This project was designed to meet the following specific requirements or mandates: County ordinance, local Ordinance, developer/client preference

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? Yes, energy efficiency and solar lighting for the parking lot.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $1,000,000-$5,000,000 (Public funding: Federal, local)

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: It didn't, it was an integral part of the design. Every project the District undertakes encourages this type of development because we have the land and space unlike a developer who may be constrained in urban setting. Long term maintenance costs are anticipated to be lower due to lack of stormwater inlets and other underground pipe structures that won't have to be cleaned and replaced at a future date.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Slightly

increased. BMP's are oversized for the site for demonstration purposes. Cost could have been slightly less, however aethetically the site looks better.

Number of jobs created: I don't know if it created new jobs / but it did provide jobs for various trades.

Job hours devoted to project:

Planning and Design: 2 years
Construction: 1 year
Annual Maintenance: Unknown - will be completed this spring

Performance Measures

Stormwater reduction performance analysis:
100%, BMP's are over designed. Most runoff won't reach the wet detention basin.

Community & economic benefits that have resulted from the project: This facility will be one of only 14 in the entire country and shall be utlized by FPDDC staff as well as Universities for urban stream research and other water quality research. This alone is why it was important that the site demonstrate the benefits of BMP's. The facility shall also be utlized for reintroducing non-game fish and mussels back into the West Branch of the DuPage River. Future plans include the addition of a 3,000 sq/ft education wing to accommodate school groups and public meetings.

Additional Information

Links to images: http://www.dupageforest.com/page.aspx?id=4294968416

Photo from Forest Preserve District of DuPage County