



Green Infrastructure & Stormwater Management CASE STUDY

Bray Hall Parking and Roadway Project

Location: One Forestry Drive, Syracuse, NY

Client: SUNY College of Environmental Science and Forestry/SUNY Construction Fund

Design Firm(s): Jacobs Engineering

Landscape architect/Project contact: Tim Toland, ASLA (SUNY-ESF)

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ASLA Chapter: New York Upstate

Project Specifications

Project Description: Expansion of an existing parking lot meant to partially offset the loss of parking associated with the construction of a new building elsewhere on campus. Result is a net reduction of parking on campus, and this project helped to address several stormwater issues, meet current county/city requirements to address CSO issues, and to relieve aging grey infrastructure. This project converted 11,066 sq/ft of impervious campus area to pervious area.

Project Type:

Institutional/education

A retrofit of an existing property

Design features: Rain garden, bioswale, porous pavers, subterranean storage reservoir, and vortex unit.

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

County ordinance, local ordinance, developer/client preference, institution master plan

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? Yes, enhanced plantings for biodiversity and to aid in college teaching needs; screening; use of native species; invasive species removal.

Cost & Jobs Analysis

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

Related Information: \$2,578,000 total project costs. Stormwater/green infrastructure costs \$635,735.

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: This was negligible as open space/green space was incorporated into residual spaces and were created by the use of retaining walls that were otherwise necessary to create parking spaces. Planting costs were slightly higher than would have been typical on this campus.

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

Number of jobs created: Unknown

Job hours devoted to project:

Planning and Design: Unknown

Construction: 8 months

Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

100% of the water falling on the site (including that from adjacent buildings) is managed through the combination of site infrastructure elements. There is 11,066 sq/ft of permeable paving and a 3,155 sq/ft rain garden/bioswale complex. Additionally a subterranean reservoir holds 8,484 cubic feet of stormwater from building roof tops, inlets and rain garden overflow structure. Water arrives at this storage reservoir and is released at rates well below pre-development rates (1-year storm flow reduced 30%, 10-year storm reduced 15%)

Community & economic benefits that have resulted from the project: Project has enhanced campus vehicular, pedestrian and bicycle circulation, has addressed several goals related to the campus master plan, has addressed city/county stormwater goals for reducing CSOs, has enhanced campus aesthetics.

Additional Information

Links to images: Available through project contact

A combination of green (rain garden, bioswale) and grey infrastructure (subterranean storage) was used to maximize the amount of stormwater managed in order to greatly alleviate the city/county issues related to CSOs. This project worked to preserve a existing campus trees (utilizing air spade investigations and retaining walls). Plantings utilized a mix of species predominantly native to the state, but also including several transplanted from elsewhere on the campus. Rain gardens will be utilized for snow storage in winter.