Green Infrastructure & Stormwater Management
CASE STUDY

Eastern Michigan University Mark Jefferson Science Complex

Location: Ypsilanti, MI
Client: Eastern Michigan University
Design Firm(s): Beckett & Raeder, Inc. (LA/PE); Lord, Aeck, & Sargent (Architect)
Landscape architect/Project contact: Deb Cooper, ASLA
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ASLA Chapter: Michigan

Project Specifications
Project Description: Redevelopment of a campus service area for a science complex building addition. The project area sits in a low area subject to occasional flooding during seasonal storm events. The design used a combination of green infrastructure (bioretention, rain garden pre-treatment, green roof) and underground storage to treat stormwater from existing parking lots as well as the new building addition.

Project Type:
Institutional/education
Part of a redevelopment project

Design features: Bioretention facility, rain garden, and green roof.

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

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? The University was interested in how
stormwater improvements would reduce currently experienced flooding from seasonal storm events.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $100,000-$500,000 (Public funding: State, 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: Existing green space was conserved to serve stormwater pre-treatment functions and therefore reduced project costs that would have otherwise been required for mechanical treatment units.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Slightly reduced costs (1-9% savings).

Number of jobs created: Construction jobs were created/maintained. Number not available.

Job hours devoted to project:
- Planning and Design: 1,400
- Construction: 450
- Annual Maintenance: 80

Performance Measures

Stormwater reduction performance analysis:
The green infrastructure and underground detention system are sized for a 100-year storm event and have a three-stage controlled release over 48-hours. Detailed calculations of system performance and infiltration capacity are available upon request.

Community & economic benefits that have resulted from the project: The green infrastructure is part of a higher education science complex and serves as a real world model for classroom environmental discussions.

Project Recognition

Project is anticipated to achieve LEED Silver Certification

Additional Information

Links to images: Drawings and photographs may be emailed upon request.