



# Green Infrastructure & Stormwater Management CASE STUDY

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## 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

**Email:** [coop@bria2.com](mailto:coop@bria2.com)

**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.