



Green Infrastructure & Stormwater Management CASE STUDY

Rochester Institute of Technology Perkins Green Housing

Location: Rochester, NY

Client: Rochester Institute of Technology (RIT)

Design Firm(s): Environmental Design and Research (EDR)

Landscape architect/Project contact: Thomas Robinson, ASLA

Email: trobinson@edrcompanies.com

ASLA Chapter: New York Upstate



Photos: Environmental Design and Research

Project Specifications

Project Description: The Rochester Institute of Technology, wanted to develop a streetscape and parking infrastructure of a peripheral student housing complex. The project was manifested on various levels: safe and efficient circulation of vehicles and pedestrians; ecologically sensitive stormwater management within a floodplain context; layering of landscape structures and features to segregate and transition from roadway to housing access points. The project represents a synthesis of green infrastructure with active transportation improvements.

Key elements included an 800' long bio-filtration swale, bus shelter with rain gardens, and a new bike/ped concourse.

Project Type:

Institutional/education

Part of a redevelopment project

Design features: Rain garden, bioswale, and curb cuts. The site was designed to provide a series of micro-watersheds that allow for infiltration close to the source. The client was concerned with providing water quality and habitat enhancements. RIT is surrounded by wetlands that feed the Genesee River and Lake Ontario. There was an acknowledgment of responsibility for the globally critical Great Lakes fresh water supply.



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

State statute, 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: 1 acre to 5 acres

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? Other design considerations included: habitat enhancement, 4-season visual interest, demonstration of sustainable site principles, increased "curb appeal" for an existing student housing complex, and reduction of heat island effect of parking area.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: None, all private funding)

Related Information:

- materials = \$45,000
- Labor = \$60,000
- equipment = \$15,000

- total = \$120,000

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 grass swale and lawn area was converted to a bio-filtration wetland swale. Initial construction cost increased modestly, but overall maintenance costs will decrease over the long-term. About .75 acres of wet lawn area that was difficult to mow was eliminated from the campus maintenance regime.

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: 10 construction jobs

Job hours devoted to project:

Planning and Design: about 400 hours

Construction: about 12,000 hours

Annual Maintenance: about 40 hours annually

Performance Measures

Stormwater reduction performance analysis:

Based on average annual precipitation, the project bioswale treats about 1.2 million gallons of run-off per year.

Community & economic benefits that have resulted from the project: The project has proven to be a catalyst for other Green Infrastructure endeavors in the region. The Monroe County Stormwater Coalition has used the RIT Perkins Green project as a case study and included it on the annual Green Infrastructure bus tour.

Project Recognition

2009 Honor Award for Built Design New York Upstate ASLA Chapter

Additional Information

Links to images:

From a formal standpoint, the project represents a transition from a suburban commuter campus to a national-level residential University. RIT has made a commitment to both aggressive growth and sustainable practices, and the project has adhered to these goals

through the development of alternative transportation infrastructure, bioremediation of stormwater, and an overall structure that supports health and wellness.



Photo: Environmental Design and Research