



Green Infrastructure & Stormwater Management CASE STUDY

Upper Iowa University

Location: Fayette, IA

Client: Upper Iowa University

Design Firm(s): Martin & Pitz Associates, Inc.

Landscape architect/Project contact: Marjorie Pitz, FASLA

Email: pitz@bitstream.net

ASLA Chapter: Minnesota

Project Specifications

Project Description: The campus needed to drain across the surface, as the town's storm sewers were inadequate to receive water. We decided to celebrate the running of surface water as an amenity, and made it the campus focus by combining it with a central green corridor. Pedestrians were separated from running water by overpasses. Water was carried in swales and stone trenches, and briefly in pipes that re-emerged into green corridors. A new settlement area and pond were created to retain water on campus. The pond was treated as an amenity.

Project Type:

Institutional/education

A retrofit of an existing property

Design features: Bioretention facility and bioswale. Stormwater run-off entered a naturalized grassland that could hold 12" of water via a weir. This area could trap sediments, dry out in time to keep grasses from dying, and could be cleaned of floatables. Beyond the weir, water entered a pond that had a 5' elevation bounce to retain all campus water and water from other storm pipes entering the site. A dam with a slow release kept the water from flowing into the nearby river, until the storm surge was past. The pond was graded to encourage a variety of natural habitats. As water rose and fell, the pond's shape transformed, making it interesting to witness during a flood event.

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

None

Impervious area managed: 1 acre to 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: greater than 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? The campus was horrified by the native grasses used, and wanted to mow them down.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: None, private donor financed the project)

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: There was no choice but to allow surface water run-off. It made redevelopment more expensive, but possible.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Not an option.

Number of jobs created: 20 people

Job hours devoted to project:

Planning and Design: 160 hours

Construction: 2,400

Annual Maintenance: 40

Performance Measures

Stormwater reduction performance analysis:

100%. Only 25-year events top the dam, and the slow release of water helps to prevent downstream flooding. Water is cleaned before it enters the river.

Community & economic benefits that have resulted from the project: The pond became an environmental teaching area for college classes. Campus expansion was enabled by managing stormwater upon the campus surface--otherwise the campus could not grow. Millions of dollars for additional campus expansion were obtained after the initial campus site improvements were made. Two new dorms and a new recreational facility were built within 5 years of the site improvements.

Additional Information

This project was built in 1990-93 in a rural area of Iowa. It was groundbreaking in its attitude, that stormwater could become an amenity. The community did not appreciate its environmental aspects except to reduce flooding, and to add beauty.