Green Infrastructure & Stormwater Management
CASE STUDY

Lake Geneva Youth Camp and Conference Center

Location: Lake Geneva, WI
Client: LG Youth Camp and Conference Center
Design Firm(s): Kelly Design Group, LLC
Landscape architect/Project contact: Shawn T. Kelly, FASLA
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Project Specifications

Project Description: State Highway 120 runs uphill from the Camp beach area and Geneva Lake. The water that was running across the camp land into the lake was filled with petrochemicals and the familiar rainbow of pollutants at the two-year storm event, coincident with prime time for youth camper use. The Client allowed me to prepare drawings that used three sequential subsurface detention devices, in concert with phytoremediation, to manage and improve the stormwater quality and quantity into the lake. The Lake Geneva Environmental Agency does periodic water sampling in the lake. After this project was installed the results were that the water flowing off Highway 120 into the lake was purer than the lake water. In the process of approval the County initially would not allow the project to move forward, as the subsurface devices were being called "structures in the lake yard." After repeated meetings with staff at the County and with the Planning Board we secured approval. This project has led the way to an improved lake yard water treatment legislation.

Project Type:
Institutional/education
A retrofit of an existing property

Design features: Bioretention facility, porous pavers, and subsurface level spreaders in series with phytoremediation in the planting selections. The final filter was the sandy beach recreated for the project.

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

Impervious area managed: Not applicable

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 unreceptive/hostile to the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? Owner requested handicap parking and access for local EMS vehicles responding to accidents on the water. Ironically, the local authority, when approving the stormwater and planting, did deny the space for the EMS vehicle staging, citing it as "patio" space.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $50,000-$100,000 (Public funding: None - all private funds.)

Related Information: All conceptual and construction documents were done by the landscape architect. All installation was done by camp staff with some minor excavation done by a local contractor for less than five thousand dollars.

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: Minimizing the footprint of the site disturbance contributed to the overall affordability of the project.

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: One for the minimal involvement of the local excavator.

Job hours devoted to project:
> Planning and Design: 60
> Construction: 1,600
> Annual Maintenance: 40

Performance Measures

Stormwater reduction performance analysis:
One hundred percent of the ten-year event for a duration of ten hours was stored on site, with zero runoff untreated by the devices in series.

Community & economic benefits that have resulted from the project: The project is often seen as a native landscape on the shores of an active lake. Locals do not even know about the benefits of the stormwater management on site, or appreciate the project in general.

Project Recognition

Additional Information
Links to images: Several are available on the www.kdgllc.com website under Projects/Portfolio.