



Green Infrastructure & Stormwater Management CASE STUDY

Feltes Lakefront Stormwater Management

Location: Fontana, WI

Client: Mr. and Mrs. Tim Feltes

Design Firm(s): Kelly Design Group, LLC

Landscape architect/Project contact: Shawn T. Kelly, FASLA

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ASLA Chapter: Wisconsin

Project Specifications

Project Description: The client's property is on a steep slope into Geneva Lake in southern Wisconsin. The runoff from higher in the watershed was flowing past the client home and downslope into the lake, carrying sediment and causing erosion at the near gully depth. Kelly Design Group, LLC designed a lake front subsurface detention device to work in concert with a series of upland level spreaders to mitigate the flow into the lake, reduce the volume, and improve water quality. The final stop for the water was below a shore path easement which encloses the entire lake front. The pedestrians are walking above a subsurface level spreader that can accommodate the one hundred year event for a duration of four hours.

Project Type:

Single family residential

A retrofit of an existing property

Design features: Bioretention facility, porous pavers, and downspout removal. The multiple level spreaders were functional in their ability to stage the water. The last device effectively removes the pedestrians from liabilities caused by failing walk due to erosion and the uneven paving that is related to eroded sites. The lake water is more pure due to the project in place because of the structures and plantings adjacent to the lake.

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

State statute, county ordinance, local ordinance

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? No.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$10,000-\$50,000 (Public funding: None, all private funds.)

Related Information: I was not a part of the bidding on this contract for construction. My firm did the design and the construction documents. A local design bid firm did the proposal for construction and the actual construction.

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: The existing open and planted areas higher in the watershed were utilized for sediment staging and as water spreading opportunities to redirect what was becoming channelized flow into the lake.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Did not influence costs.

Number of jobs created: 2

Job hours devoted to project:

Planning and Design: 24

Construction: 160 team hours.

Annual Maintenance: 8 hours

Performance Measures

Stormwater reduction performance analysis:

The overall system functions to stage the one hundred year event for four hours.

Community & economic benefits that have resulted from the project: This project resulted in and was the first ever installed plan in Walworth County to become the precedent for allowing subsurface staging of stormwater in the lake yard.

Additional Information

Links to images: One image on the www.kdglc.com website under projects.



Photo: Kelly Design Group, LLC.