Green Infrastructure & Stormwater Management CASE STUDY

Sterling Stormwater Pond Improvements

Location: Akron, OH
Client: City of Akron
Design Firm(s): URS Corporation
Landscape architect/Project contact: Thomas Evans, ASLA
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ASLA Chapter: Ohio

Project Specifications

Project Description: The Sterling Stormwater Pond Improvement project will retrofit an existing 3-acre traditional stormwater pond serving as a regional detention basin to enhance stormater functions, accomodate economic development and improve aesthetics on a corporate headquarters campus serving 3,000 employees. Multiple benefits provided include increased stormwater storage capacity by 25 acre feet, decreased peak discharges by 30%, accomodate campus growth and development, enhance stormwater filtration functions, stabilize eroding stream banks, reduce nuisance geese, and dramatically improve the aesthetics of the pond.

Project Type:
Commercial
A retrofit of an existing property

Design features: Stormwater pond retrofit, stormwater wetland, and stream restoration.

This project was designed to meet the following specific requirements or mandates:
Local ordinance, project obtained a Nationwide Permit for Stream Restoration from USACE and OEPA.

Impervious area managed: greater than 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 apprehensive about the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? The site is the Corporate Headquarters for Sterling Jewelers, the largest retail jeweler in the US. Sterling requested incorporation of a loop fitness trail around the pond. Extensive naturalistic and wetland plantings will dramatically improve visual diversity and richness of pond aesthetics while also deterring nuisance geese infestation. Sterling is deeply committed to sustainability, and has requested design modifications to their irrigation system to use pond water for irrigation and reduce potable water use. Sterling also intends to pursue Sustainable Sites certification for the site.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $1,000,000-$5,000,000 (Public funding: Local, $3.5 M project cost)

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 stormwater pond is owned by the city; permit requirements require placing an environmental covenant and deed restrictions on the open space to further protect the property from future impacts or modifications.

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: 25

Job hours devoted to project:

Planning and Design: 2,000
Construction: 20,000
Annual Maintenance: 1,000

Performance Measures

Stormwater reduction performance analysis:

HEC RAS modeling indicates that by lowering the existing pond elevation by 7', significantly increases stormwater storage which reduces peak storm discharges from a variety of design storms by 30%, even factoring increased runoff from future development, while reducing downstream flooding.

Community & economic benefits that have resulted from the project: The Sterling Pond Improvement project will facilitate development of a future campus building capable of housing

an addition 200 jobs at the site. Pond aesthetics will be improved to become an attractive visual amenity for 3,000 corporate office employees. The loop trail around the pond replaces a parking lot walking path and will support fitness initiatives for office employees. Pond improvements will enhance property values of the corporate campus owned by independent developers. Lastly this project provides a large scale demonstration of a large scale stormwater pond retrofit for northeast Ohio.

Additional Information

Links to images: Futher description, images, plans, renderings, photosimulations are readily available from the landscape architect.