Green Infrastructure & Stormwater Management
CASE STUDY

Henry Ford Community College Infrastructure Improvement Project

Location: Dearborn, MI
Client: Henry Ford Community College
Design Firm(s): Beckett & Raeder Inc, Carl Walker Parking
Landscape architect/Project contact: Deb Cooper, ASLA
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ASLA Chapter: Michigan

Project Specifications

**Project Description:** Project consisted of a parking lot and surface road reconstruction including all associated stormwater management. Included in the project was the development of a campus green area. Henry Ford Community college resides along the banks of the River Rouge will is subject to frequent spring flooding. Stormwater improvements consisted of one of the nations largest underground detention system and a surface stormwater pond for quantity detention. Stormwater quality was achieved with series of bioswales and structural treatment. Bioswales were constructed by amending existing soils to allow for infiltration, cleaning and detention of surface water from the parking areas.

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

**Design features:** Bioretention facility, bioswale, porous pavers, and curb cuts.

**This project was designed to meet the following specific requirements or mandates:**
State statute, local ordinance

**Impervious area managed:** greater than 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? There is a total of 6.19 acres which flow into
the developed bioswales/bioretention areas. The storage volume of the bioswale areas in
sufficient to detain the 2-year storm event.

Cost & Jobs Analysis
Estimated Cost of Stormwater Project: $1,000,000-$5,000,000 (Public funding: State, local)

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 surface pond that was created with this project employed a
permanent water elevation pond with submergent, transition and upland plantings. The pond
was created with a fountain, overlook area and surrounding pervious paths to provide an overall
educational and recreational experience.

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: Not available

Job hours devoted to project: Not available
  Planning and Design: Not available
  Construction: Not available
  Annual Maintenance: Not available

Performance Measures
Stormwater reduction performance analysis:
There is a total of 6.19 acres which flow into the developed bioswales/bioretention areas. The
storage volume of the bioswale areas in sufficient to detain the 2 year storm event for those
contributing areas. The total acreage of the improved site which does not flow to
bioswales/bioretention is 54.22 acres. Therefore approximately 10% of the 2-year stormevent
would be retained on site.

Community & economic benefits that have resulted from the project: Prior to the
construction of this project, the adjacent River Rouge was frequented by flooding during spring
storm events. With the encorporation of this project the contribution of flood waters from the site
have been greatly decreased in addition to a great increase of the quality of the stormwater that
leaves the site. Although the stormwater benefits were only required to implemented for the
disturbed area of the campus, due to the existence of stormwater collection systems already in place, the entire campus is now provided with the benefits of both stormwater quantity detention and stormwater quality.

**Project Recognition**

Cover Story for "Stormwater" Magazine, May 2010