Green Infrastructure & Stormwater Management CASE STUDY

Georgetown Fire Station Parking Lot

Location: Georgetown, KY
Client: City of Georgetown
Design Firm(s): CDP Engineers
Landscape architect/Project contact: Jason Hale, ASLA
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ASLA Chapter: Kentucky

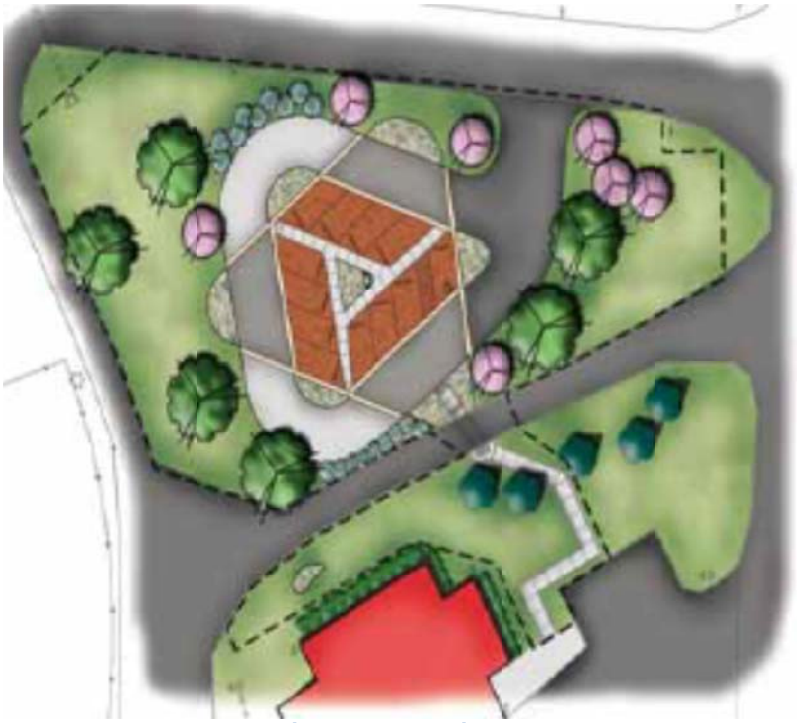

Photo: CDP Engineers

Project Specifications

Project Description: The Georgetown Fire Station parking lot stands as a visible display of stormwater management practices being implemented within an urban setting in Central Kentucky, and continues to serve the local and regional community as an educational and demonstrational facility. This project was funded in part by a 319(h) grant, and features seven different best management practices: rain gardens, 3 different types of pervious pavement, 2 types of subsurface detention, a rain barrel, and erosion and sediment control. Another key

component of this project was public education, and this continues to be an asset to the community today.

Project Type:
City owned fire station parking lot
A retrofit of an existing property

Design features: Rain barrels, porous pavers, pervious asphalt, porous concrete, subsurface detention systems, and various types of erosion and sediment control devices.

This project was designed to meet the following specific requirements or mandates: Local ordinance, designed with local ordinance as a baseline, but exceeds minimum requirements.

Impervious area managed: less than 5,000 sq/ft

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 indifferent to the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? As a result of the public education associated with the construction process, the project gained a high profile within the community. This high profile spurred the client's desire for a higher level of aesthetics for the design on the parking lot.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $100,000-$500,000 (Public funding: Federal, local - partially funded through an EPA 319(h) grant.)

Related Information: Project funded through a combination of local and Federal funding: 60% Federal, 40% City of Georgetown.

Grant Total:

- Personnel: 148,600
- Supplies: 88,500
- Equipment: 21,750
- Travel: 8,376
- Contractual: 189,000

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: This project consisted of the expansion of the parking lot for the Georgetown Fire Station (No. 3) into a small lawn area, and did not conserve/preserve nor remove any significant green space/open space. However, developing this lawn area for a conventional parking lot would have eliminated essentially all green space. The green design incorporating rain gardens, central planting area with educational signage, native species and angle parking, along with nearly full utilization of permeable paving surfaces all provided reductions in imperviousness. The impact of cost on this site cannot be readily applied since this project was developed as a demonstration site for numerous LID practices, which added a significant level of complexity above and beyond a simple swap of permeable pavement for conventional. Providing subsurface stormwater storage and infiltration allowed for full usage of the site's surface area for development/parking needs.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? See previous

Number of jobs created: Existing city labor was expected to be used for the required match dollar amounts. Other job responsibilities vary, from full-time contractors to individual product suppliers.

Job hours devoted to project:

Planning and Design: 2,400 man hours
Construction: Unit Price contract: $142,000
Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

To date, 100 % of the runoff generated from the site and contributing subwatershed has been contained, treated, and infiltrated on site. The design does include an overflow pipe from the subsurface detention area that would allow for discharge of captured runoff prior to allowing it to surcharge up through the permeable paving surfaces, but no flow has been observed through this pipe.

Community & economic benefits that have resulted from the project: Public education has been one of the largest benefits of this project for the local and regional community. Because of its regional significance the project has also become a destination for people, which has resulted in an added amenity for the local community.

Project Recognition

2010 EEA National Finalist; 2009 American Council of Engineering Companies of Kentucky, Engineering Excellence Award (EEA); 2009 APWA-KY Environmental Award

Additional Information

Links to images:

http://www.cdpengineers.com/projects/LandscapeArchitecture/GeorgetownFireStationBMP.pdf