



Green Infrastructure & Stormwater Management CASE STUDY

Triangle Parking Lot

Location: Stone Mountain, GA

Client: Stone Mountain Memorial Association

Design Firm(s): Robert and Company

Landscape architect/Project contact: Andrew Kohr, ASLA and David Sprinkle

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ASLA Chapter: Georgia

Project Specifications

Project Description: Stone Mountain Park continues to host major events that frequently attract thousands of visitors. A shortage of adequate parking facilities near the Park Center District in the vicinity of the Memorial Hall and Lawn area has been a recurring problem for many years. In early 2007, the Stone Mountain Memorial Association selected Robert and Company to design a 430-car parking lot in the Triangle area adjacent to the west side of the Memorial Lawn and the Crossroads Village complex. In the interest of minimizing the visual, environmental, and physical space impacts of a parking lot of this magnitude, this new parking plaza was constructed utilizing porous pavement throughout the entire parking area and access drives. Stormwater percolates through the precast concrete interlocking porous paver surface into and through a thick granular base course, eliminating the need for a large surface stormwater detention pond and related appurtenances. Also included are the associated pedestrian pathway systems necessary to accommodate the large volume of visitors that will utilize this facility while attending weekly events hosted by the park.

Project Type:

Open space - park

Part of a redevelopment project

Design features: Porous pavers, a subsurface, aggregate-filled reservoir, and a multi-layered runoff filtration system.

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

State statute, county ordinance, to meet funding criteria, developer/client preference

Impervious area managed: greater than 5 acres

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 supportive of the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? We were required to stay out of existing pine forest and adjacent stream buffers, as well as improved aesthetics, lighting, and usability (including ADA accessibility) of the site.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$1,000,000-\$5,000,000 (Public funding: None)

Was a green vs. grey cost analysis performed? Yes, initial capital costs for development of the site as a green project were 5-10% higher than traditional grey infrastructure costs. However, lifecycle costs and enhanced usability made the selection of "green" development a viable economic alternative.

Cost impact of conserving green/open space to the overall costs of the site

design/development project: The economic impact resulting from preserving the existing open space allowed for a larger, usable development footprint when compared to a grey infrastructure development.

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: 4

Job hours devoted to project:

Planning and Design: 1,200
Construction: 6,200
Annual Maintenance: 120

Performance Measures

Stormwater reduction performance analysis:

Across the board, design calculations indicated that pre-developed flow rates would be reduced by approximately 35%. Actual field observations indicate significantly lower site discharges, a reduction of more than 80% of pre-developed flow rates for more frequent storm events.

Community & economic benefits that have resulted from the project: The creation of this parking lot, has led to the ability of Stone Mountain Park to facilitate greater numbers of tourists for site visits and special events. Another added benefit is the reduced ambient temperature of the site when compared to traditional grey infrastructure. Another added benefit was reduced man hours and improved coordination by park police to safely empty the lot following large events. Overall, the space is popular on a daily basis and used as a community gathering space for picnics, reunions, and school trips.

Project Recognition

ICPI Publication

Additional Information

Links to images: <http://www.youtube.com/watch?v=nxC6lXxv-zY>