



Green Infrastructure & Stormwater Management CASE STUDY

Pearly Gates Park

Location: The Bronx, NYC, NY

Client: NYC Parks & Recreation

Design Firm(s): NYC Parks & Recreation

Landscape architect/Project contact: Nette Compton, ASLA

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ASLA Chapter: New York

Project Specifications

Project Description: This reconstruction project redeveloped a declining .65-acre neighborhood playground of mostly pavement (95% impermeable) into a sustainable, stormwater-capturing, 21st century public space for families. Using recycled and local materials, passive capture techniques to filter and slow the stormwater, and increasing permeability by 500%, Pearly Gates Playground is proof that even the smallest and most urban sites can contribute to solving our larger water quality issues through green infrastructure improvements.

Project Type:

Open space - park

A retrofit of an existing property

Design features: Bioretention facility, rain garden, bioswale, flush curbs, french drains, and amended soils.

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

Developer/client preference

Impervious area managed: 5,000 sq/ft to 1 acre

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? No, control was designed against the actual design. Factors such as more sustainable materials, usable play space, and security were primary requests.



Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: Local - local council member funded project)

Related Information: \$1,330,000 was the construction budget. 40% labor = \$532,000, 40% materials = \$532,000, 20% contractor profit = \$266,000. This is all speculation, however, since labor, materials, and equipment costs are combined into unit costs for this contract.

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: There was very minimal (5%) open/green space to preserve, therefore there was no effect on the overall cost to the project.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Did not influence costs. Sustainable features were incorporated in the plan from the beginning, therefore it is difficult to evaluate what the cost would have been in a "traditional" design vs. the actual design.

Number of jobs created: The contractor stated "There were approximately 4-6 people on the project".

Job hours devoted to project:

Planning and Design: 5,645 hours

Construction: 1 year for construction

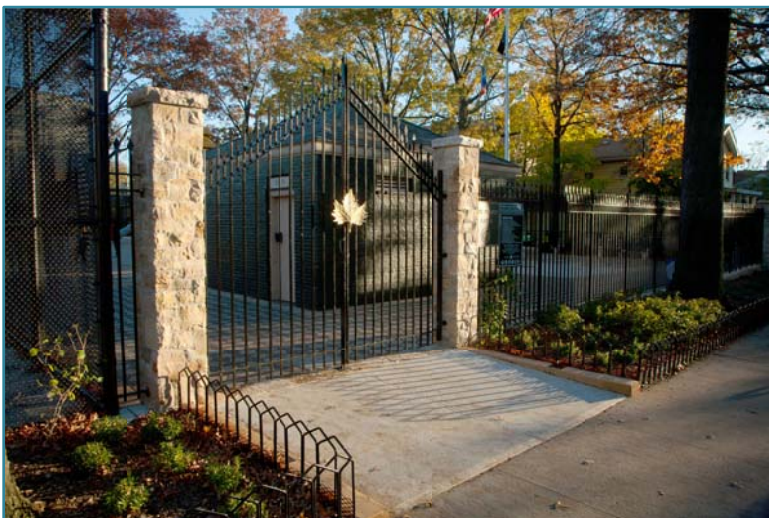
Annual Maintenance: 8 hours/week

Performance Measures

Stormwater reduction performance analysis:

Stormwater runoff is reduced during a 5-year storm by a minimum of 15%, and 950,000 gallons of storm water are kept onsite in a year of typical rainfall and used for watering plants and groundwater recharge.

Community & economic benefits that have resulted from the project: The park and community have rebounded from a gang-filled, crime prone site to a vibrant, family-oriented site that positively contributes to the community. Benefits include increased property values of surrounding private properties, increased safety and security of park goers, displacement of criminal activity, increased green space for community to enjoy, cleaner water filtered by planting beds, and expanded areas for play and active recreation.



Project Recognition

Featured in the High Performance Landscape Guidelines opening presentation and exhibit & July 15, 2010 WNYC article "New York Looks to Philadelphia for Ideas on Sewer Overflow Issues" BY Brian Zumhagen