



Green Infrastructure & Stormwater Management CASE STUDY

Fort Totten North Park

Location: Queens, New York City, NY

Client: City of New York | Parks & Recreation

Design Firm(s): Nancy Owens Studio LLC

Landscape architect/Project contact: Nancy Owens, ASLA

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ASLA Chapter: New York

Project Specifications

Project Description: Fort Totten North Park is a new nine-acre waterfront park in Queens, NY. The project included the reduction of impervious surface through the demolition of nineteen abandoned US Army houses, and roads and parking areas. Several large scale sculptural landscape design gestures transformed the site through the installation of native vegetation and manipulation of terrain. Design priorities included the regeneration of native habitat, stormwater retention and enhanced opportunities for cultural and ecological education. Integral to the design of the North Park is a one-acre bioswale at the site's lower edge. Runoff at the site was previously collected in a system of pipes and drainage structures, and released directly into the Long Island Sound. At the new North Park, stormwater flows through the densely planted bioswale, where it is absorbed, stored, filtered and slowly released.

Project Type:

Open space - garden/arboretum

Part of a redevelopment project

Design features: Bioretention facility, rain garden, and bioswale.

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

Developer/client preference, approvals from: New York City Department of Parks and Recreation, Landmarks Preservation Commission, Department of Buildings, New York State Department of Environmental Conservation

Impervious area managed: 1 acre to 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? The client asked for an attractive barrier between their property and the adjacent property owned by the Fire Department of New York. The heavily planted bioswale provides the desired separation.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$1,000,000-\$5,000,000 (Public funding: Local)

Related Information:

- Demolition: \$1,150,000
- Storm Drainage System: \$120,000
- Water Supply system: \$250,000
- Plant Material and topsoil for bioswale: \$240,000
- Mobilization: \$200,000
- Ordinance and Archaeological Monitoring: \$115,000

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: Increase in cost for grading of bioswale and installation of native plant material and topsoil for bioswale was offset by decrease in cost of stormwater infrastructure.

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: 12

Job hours devoted to project:

Planning and Design: 3,400
Construction: 7,500
Annual Maintenance: 350

Performance Measures

Stormwater reduction performance analysis:

There is an 11% reduction in peak flow off of the site, for a 2-year storm event.

Community & economic benefits that have resulted from the project: The project has contributed to improving the water quality in Little Neck Bay, created wildlife and native plant habitat for environmental education, and created an opportunity for educating the public about strategies to improve water quality and stormwater treatment. The project has improved the quality of life for park users and employees at the adjacent Fire Department of New York facilities, and property values for neighboring residents.

Project Recognition

The Sustainable Sites Initiative – Pilot Project; American Society of Landscape Architects NY Chapter – Merit Award; Center for Architecture - High Performance Landscape Guidelines: 21st Century Parks for NYC - Exhibition and Lecture; Landscape Architecture Magazine - Cover story

Additional Information

Links to images:

http://www.nancyowensstudio.com/project_template.php?category=civic&id=1&bgld=01

http://www.nancyowensstudio.com/project_template.php?category=planning&id=11&bgld=01