Green Infrastructure & Stormwater Management
CASE STUDY

Harlem River Park – Designing the Edge

Location: Between 138th and 145th St., Manhattan shore of Harlem River, NY, NY
Client: NYC Parks & Recreation and NYC Economic Development Corp.
Design Firm(s): Ricardo Hinkle and Marcha Johnson, NYC Parks; Parsons Brinkerhoff for NYC EDC- Greg Hoer
Landscape architect/Project contact: Marcha Johnson, PhD, ASLA
Email: marcha.johnson@parks.nyc.gov
ASLA Chapter: New York

Project Specifications
Project Description: This project replaced about 1,000 linear feet of corroded steel sheeting used to channelize the Harlem River in the past, with a series of different porous edges having high habitat value. The edges include green walls, terraced gabions incorporating filter-feeding shellfish, tidal pools, salt marsh fringe and native coastal plantings. Construction was completed in 2009.

Project Type:
Open space - park
A retrofit of an existing property

Design features: Porous seawalls with flood storage capacity in the adjacent green space.

This project was designed to meet the following specific requirements or mandates:
Designed as a demonstration prototype for flood-absorption, small boat access and estuarine habitat.

Impervious area managed: 1 acre to 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 5,000 sq/ft to 1 acre - filled shoreline was cut back to provide more floodplain functions.

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? Yes, maximizing green space and accommodating the new bike path.

**Cost & Jobs Analysis**

**Estimated Cost of Stormwater Project:** >$5,000,000 (Public funding: Federal, 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: Improving the porosity of the floodplain with greenwalls and gabions was roughly equivalent to replacing the steel sheetwalls in-kind.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Slightly increased. Compared with a similar project replacing the old sea wall with new steel sheeting, cost were slightly higher; however, the site construction constraints (requiring construction from the water side on barges) added costs unrelated to the use of porous materials.

**Number of jobs created:** Temporarily, about 12 contractors were employed, three landscape architects, 12 administrators and construction supervisors.

**Job hours devoted to project:**
- Planning and Design: 4,000
- Construction: Not available
- Annual Maintenance: Not available

**Performance Measures**

**Stormwater reduction performance analysis:** This project was not intended to reduce runoff but to absorb runoff and high water in the river.

**Community & economic benefits that have resulted from the project:** Access to improved, safer recreational space, connections to the river environment for interpretation and education, improved estuarine habitat, and cleaner water.

**Project Recognition**