



Green Infrastructure & Stormwater Management CASE STUDY

Averill Park Reconstruction

Location: Franklin Square, Hempstead, NY

Client: Town of Hempstead Department of Parks

Design Firm(s): Greenman Pedersen Inc.

Landscape architect/Project contact: James P. Garrahan Jr., ASLA, RLA, LEED AP

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ASLA Chapter: New York

Project Specifications

Project Description: The project involved the reconstruction of a recreational ball field. The facility was built on a former municipal landfill site in the mid-1960s. Over time, significant settlement occurred, creating difficulties for the field users, largely Little League participants and periodic recreational users. In addition, the site drainage system was compromised by the settlement and was no longer able to flow to the adjacent municipal system as originally designed. GPI redesigned the site grading to provide a playable and safer facility. The



drainage for the field was reconfigured to provide a system that collected and detained the flow in a wet meadow/rain garden area that was designed in the location of a nuisance flood area. The detention area was planted with tolerant native species that process stormwater improving water quality. The combination of water and vegetation also provides wildlife habitat. Storm flow is dissipated by evapo-transpiration, and ultimately is recharged on-site through leaching

structures at the perimeter of the wet meadow/rain garden. A modular structural retaining wall system was used to raise the outfield area of the facility to allow adequate site lines for the players. GPI provided survey and mapping, design, bidding services, and support services during construction for the Town Parks Department.

Project Type:

Open Space-Park

A retrofit of an existing property

Design features: rain garden and bioswale.**This project was designed to meet the following specific requirements or mandates:**

Developer/client preference. This approach to stormwater management was suggested by GPI Landscape Architecture staff and was supported by the Town Parks Department

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:** 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?** No**Cost & Jobs Analysis****Estimated Cost of Stormwater Project:** \$100,000-\$500,000 (Public funding: 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:** By regrading to detain and recharge storm flow on-site, the existing trunk lines that had collapsed due to settlement did not have to be reconstructed.**Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)?** Slightly reduced costs (1-9% savings).**Number of jobs created:** 10 during construction**Job hours devoted to project:**

Planning and Design: 400

Construction: 9,600

Annual Maintenance: 100

Performance Measures**Stormwater reduction performance analysis:**

The 2- year storm flow is typically held within the perimeter of the wet meadow/raingarden.



When a large storm or repeated storms occur the surge flows into leaching pools at the perimeter of the area and recharges on-site.

Community & economic benefits that have resulted from the project: Flow to the existing municipal storm system has been reduced making capacity available to the remaining community during major storm events.

Additional Information

Links to images:

<http://www.gpinet.com/userfiles/file/BAB%20Averill%20Park.pdf>

To aid the Town in explaining the reason and purpose of this type of approach to stormwater management the following description was prepared by GPI for the Town to use on a descriptive sign at the wet meadow detention area. It is not certain if the sign has been deployed.



Educational Observation Area - Do Not Enter

As part of the grading and ball field improvements, this area has been designed as a wet meadow. In nature this type of ecological community exists at low points in the terrain and serves to retain and process storm water flows and drain watershed areas. The plants included here were selected for their tolerance to these wet conditions and the transition to an upland meadow. The stormwater draining from the ball field and other park areas around the meadow flows through this area, where it is temporarily detained. Some of this water is used by the wetland plants and returned to the atmosphere by transpiration, some will evaporate into the air directly and some will recharge into the ground through the soil or through leaching pool structures included in the design at the perimeter of the meadow. With the environmental

concerns of today it is important to consider alternatives that combine engineering function and natural landscape treatments. This type of ecological drainage system controls storm flows to help reduce erosion, conserves ground water and protects its quality and also provides habitat improvements for wildlife. A popular term for this type of facility is a “Rain Garden”. Enjoy the view of the ducks, birds and butterflies.

