



# Department of Public Works Facility Sustainable Site Design

## Lexington, MA

*Lexington DPW Facility*

### PROJECT HIGHLIGHTS:

- Identified opportunities for recreational and cultural enhancements
- Developed natural systems approach to stormwater management that met Pre-Columbian runoff rates
- Designed green roof for rainwater harvesting for vehicle wash bay and rain gardens
- Utilized porous paving for pilot project to monitor long-term effectiveness

### SERVICES PROVIDED:

- Sustainability consultant
- Site analysis
- Permitting
- Construction documentation and observation
- Invasive species management
- Stormwater BMP management plan
- LEED Silver status

Project Completion: 2009  
 Entire Project Cost:  
 \$19 Million

Reference:  
 Lexington Department of  
 Public Works  
 Lexington, MA



**The Challenge** - Under a brand new municipal policy requiring public projects to attain sustainable design standards, the town of Lexington, MA requested its design team to create a state-of-the-art, environmentally sensitive Public Works facility on a 9.6-acre brownfield site that adjoins wetlands, a perennial stream, and residences. The program called for an 88,000ft<sup>2</sup> facility to house the DPW and other town offices, complete with vehicle storage and maintenance bays; materials storage buildings for sand, salt, and consumable supplies; vehicle fueling facilities; and over 100 parking spaces. Special constraints included the need to maintain DPW operations during construction and to provide a pleasant, healthy, and secure workplace for town employees, as well as to develop a site plan that protects the wetlands, handles stormwater and site drainage innovatively onsite, and includes landscaping and other features that buffers DPW operations visually and audibly from residences and a regional bikeway.

**The Interdisciplinary Approach** - The role of Bioengineering Group (BioGroup) was to serve as sustainability consultant, obtain all required permits, and to develop a sustainable site/civil/landscape design consistent with the LEED Silver objective. At the onset of the project, BioGroup team members conducted an extensive site analysis to identify the



*Rainwater Harvesting through use of Rain Garden*

opportunities for sustainable site design and to identify permitting requirements, including the identification and delineation of all resource areas and buffer zones. The BioGroup team developed the site design, incorporating on-site management of stormwater using a combination of management practices including minimizing paved areas and incorporating a green roof to reduce impervious surface, using rainwater harvesting to recycle rainwater for vehicle washing, and matching pre-development water budget functions. In addition, cut and fill volumes were carefully balanced to minimize the amount of potentially contaminated material for disposal.



*Example of Porous Pavement Stormwater Management*

**The Sustainable Result** - BioGroup established the necessary rapport with the architect, town administrators, regulatory agencies, community groups, and facility users in order to promote timely and open communication. The client's goals were met on time and on budget. The project has fostered a broader level of appreciation and commitment to sustainable design within the town. The project team also participated in a Green Teamwork study sponsored by NESEA (Northeast Sustainable Energy Association), featuring the project as an example to follow as communities within the region embark upon sustainable design initiatives