



MPA Teams Up with Baltimore School for Award-Winning Stormwater Project

www.mpa.maryland.gov/greenport

*GreenPort Showcase Story
Posted May 2013*

Slow it down, spread it out, soak it in!

This chant recently became reality at Baltimore's Polytechnic Institute, where the MPA Schoolyard Greening program helped reduce the amount of untreated stormwater running directly from a school parking lot into the nearby Jones Falls.

When rain hits the ground and runs over a hard surface, it washes pollutants into local waterways. Green spaces are always good for clean water, because they catch the rain, slow it down, and let it soak into the earth. Trees, flowers, and shrubs filter pollutants like phosphorus and nitrogen, and they also reduce erosion from streambanks and wetlands.

At the Polytechnic Institute, MPA engineers gave nature a helping hand — they designed special a special soil substructures to make this natural process even more effective.

Approximately 3,250 square feet of asphalt were removed to construct two "bioretention" areas using the new design. Together, they capture and naturally treat runoff from one acre (43,560 square feet) of the remaining asphalt parking lot.

"This Greening project was a great opportunity to help protect water quality in the Jones Falls and provide a real-life learning opportunity for the school community," said Michael Bozman, MPA Manager of Permits and Special Projects.

The site was selected through MPA's partnerships with Baltimore City Public Schools and various local environmental organizations that help identify schools for potential schoolyard greening projects. The Polytechnic student parking lot was ideal because of its size, the orientation of existing storm drain inlets, and available space.

The MPA developed its Schoolyard Greening program to offset the environmental impact of its operations, including stormwater runoff from buildings, roads, and parking areas that are required in and around marine terminals.



Engineers designed a soil substructure (shown here under construction) that collects and filters stormwater runoff.

Bioretention projects are often not possible directly on the terminals because of site conditions and limited space. The Schoolyard Greening program is an alternative way for the MPA to protect water quality in the broader Baltimore area.

The Polytechnic Institute serves high school students with an emphasis on science, math, and engineering, so this project provided a learning experience that was especially well matched to the school.

Construction was completed during the spring 2012 semester, and lead science teacher Robert Marinelli integrated the design and construction process into classroom activities, educating students on the importance of urban stormwater management. Students reviewed design plans, assisted with site layout and topographic survey, and observed the construction process from start to finish.

Blue Water Baltimore, the local watershed organization, is working with students to inspect, monitor, and maintain the area and continue incorporating water quality lessons into the school curriculum.

MPA's contractor, Maryland Environmental Service, worked with the Chesapeake Center for Youth Development to provide interns for the construction and implementation team.

The Maryland Department of the Environment recognized the quality of the Polytechnic project by presenting the MPA with its 2012 Smart, Green & Growing Award for Sustainable Infrastructure and Innovations in Stormwater Management.

"The project is an excellent demonstration of environmental site design in an urban setting," said Maryland Department of the Environment Secretary Robert M. Summers. "The public/private partnership between Baltimore Polytechnic Institute and the Maryland Port Administration is a wonderful example of the types of cost-effective, attractive, and easily feasible projects that are crucial to Maryland's Chesapeake Bay Restoration efforts."



Students learned about urban stormwater management through a real-life project on school grounds.