

SIDWELL FRIENDS SCHOOL

# Sidwell Friends Middle School Natural Wastewater and Stormwater Treatment Reuse System

Washington, DC



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**S**idwell Friends School (SFS) is deeply committed to practicing responsible environmental stewardship with curriculum grounded in learning about the natural world and their relationship to it. When the school decided to construct a new Middle

School building, sustainable design was a logical expression of institutional values. Working with an integrated design team that included Kieran Timberlake Associates LLP, Andropogon Associates LTD, and JFW Project Management, Biohabitats

contributed heavily to the water infrastructure. Biohabitats designed the wastewater and stormwater systems for the school, incorporating the design into the school yard and entrance. The final designs helped earn a LEED Platinum certification (first K-12 school in the world), an “AIA Top Ten” award and admiration of more than 10,000 visitors, since its construction.

The stormwater system captures runoff from a green roof, directs it through a series of artistic flow forms to a pond. The flow form sculpture welcomes visitors and aerates the water to support a healthy ecosystem for pond plants and animals. The pond, with access steps, doubles as an outdoor classroom. A small recirculation pump sends water back to the flow form for continual treatment and appeal. As rain water enters the system, the pond overflows into a beautiful floodplain that infiltrates water into the natural environment.

A 3,000 gallons-per-day wastewater system captures all wastewater from the building and cleans it through a series of natural treatment steps that mimic natural ecologies. Treatment components include a series of terraced constructed wetland cells, a trickling filter, a recirculating sand filter, and ultra violet (UV) disinfection, all tightly integrated into the building and site. This closed loop system recycles water for toilet flushing.

Planting native species and non-invasive adaptive plant varieties preserves local biodiversity and reintroduces natural pathways through the campus allowing birds and other animals to move between the neighboring watersheds of Rock Creek Park to Glover-Archibald Park.

Biohabitats continues to work with the Sidwell Friends School to maintain its environmental leadership through ongoing remote monitoring, quarterly maintenance visits, and technical support and engineering.

*conservation planning*  
*ecological restoration*  
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