The New York Times | http://nyti.ms/1P6pWok

N.Y. / REGION

A Park to Sop Up Pollutants Before They Flow Into the Gowanus Canal

By **LISA W. FODERARO** DEC. 15, 2015

At the foot of Second Street in Brooklyn, hard by the Gowanus Canal, is a tiny green space with a very big job.

Aptly called Sponge Park, the 2,100-square-foot plot will, when it opens next spring, intercept thousands of gallons of storm water, along with pollutants like heavy metals and dog waste, before they can enter the canal. The park's absorbent qualities come from flood-tolerant plantings like asters, Rosa rugosa and sedge grass, as well as a network of sand beds and soils designed to hold water.

"I didn't want to go into a community and tell them that I'm putting a wetland in their backyard," said Susannah C. Drake, a landscape architect and founding principal of DLANDstudio, which designed Sponge Park. "That wouldn't fly. But everyone understands what a sponge does, even if they don't understand green infrastructure or phytoremediation."

The park is part of a larger effort in New York City and urban areas across the country to prevent polluted storm water from flowing directly into rivers or

overloading sewage treatment plants. With combined storm-sewer systems like New York's, in which one set of pipes handles both sewage and storm water, even moderate rainfall can overwhelm treatment plants, causing raw sewage to spew into waterways.

The issue has added urgency along the heavily polluted Gowanus Canal, which was designated a federal Superfund site in 2010. Not only does the 1.8-mile canal have a series of so-called outflow pipes — discharge points that divert the mix of sewage and storm water from overtaxing the local treatment plant in rainy weather — but there are also a dozen street ends abutting the Gowanus where storm water cascades unimpeded into the canal.

Sponge Park is a $1.5 million pilot project, overseen by the city's Department of Environmental Protection, that will determine whether such spaces can effectively prevent new pollution from entering the canal.

Ms. Drake said an analysis by her firm showed that in the vast majority of storms, the park would capture all of the water flowing to the lower stretch of Second Street, with a dead end at the canal. During the heaviest rainfall, the park will at least cleanse and filter water before it flows into the canal. Rainwater itself is fairly clean, but it soon picks up various offenders from roadways, including litter, bird droppings, dog waste and contaminants produced by cars such as antifreeze, cadmium, oil and zinc.

Sponge Park, she said, has "just the right amount of sand and organic matter, because you want to get the right balance of permeability and water-holding capacity."

Ms. Drake has a patent pending on the specific design of the park, which features alternating beds of gravel and plantings. And she has trademarked the name Sponge Park, in the hope that it can be replicated elsewhere.

Andrea Parker, the executive director of the Gowanus Canal Conservancy, said Sponge Park was a key component of the city's emerging network

designed to sop up storm water and improve water quality. “Sponge Park will provide a space where people can see green infrastructure in action,” she said.

Each year across the city, nearly 30 billion gallons of raw sewage and polluted storm water are discharged from hundreds of pipes into local waterways when sewage plants are overwhelmed. Such overflows can occur up to 75 times a year, according to the environmental group the Natural Resources Defense Council, and are the most serious challenge to water quality in the New York area, preventing rivers and bays from meeting federal standards for swimming, fishing and wildlife habitats.

The city’s environmental agency is now in the midst of a 20-year, $2.4 billion campaign, using public and private money, to protect local waterways with a network that relies on ecology.

In addition to using traditional, so-called gray infrastructure like holding tanks and tunnels, the program deploys green roofs, gardens, special soils and porous surfaces to capture and retain storm-water runoff — often through landscapes such as curbside gardens and playgrounds.

It is an approach gaining momentum across the United States, where 860 municipalities have combined sewer systems, according to Adrian Benepe, the senior vice president and director of city park development at the Trust for Public Land, a nonprofit conservation group.

In New York City, the trust has overseen the construction of seven playgrounds designed to capture storm water, out of 40 that are planned, and it will develop nearly 40 playgrounds in Philadelphia. The group is also involved in several other green infrastructure projects, from Los Angeles to Boston.

“New York City is proving to be a laboratory for green infrastructure, and the city’s D.E.P. has been very creative about trying out new solutions,” Mr. Benepe said.

He added that Sponge Park could be an “international model,” particularly because most European cities also have combined sewer systems.

But the Gowanus Canal, a murky, narrow waterway that suffered decades of industrial abuse, has a separate set of challenges. Along the entire length of the canal, the federal Environmental Protection Agency has discovered contamination including pesticides, metals and the cancer-causing chemicals known as PCBs.

In 2010, the E.P.A. estimated that the cleanup, which has yet to begin, would last 10 to 12 years and cost upward of $500 million.

Still, Ms. Drake said a goal of Sponge Park was to prevent the addition of new pollution into the canal as various agencies embarked on the cleanup. It will use precast, modular components that can be quickly assembled.

“It was eight years in the planning and will be eight weeks in construction,” she said of Sponge Park. “It’s like assembling Legos.”

A version of this article appears in print on December 16, 2015, on page A27 of the New York edition with the headline: Building a Park in Brooklyn to Sop Up Polluted Waters.
