NUCOR® SKYLINE

CASE STUDY

Newtown Creek Wastewater Treatment Plant

Brooklyn, New York

HISTORY

Heavy industrial development and governmental activities dating back from the 1800s have changed Newtown Creek. The area is one of the busiest industrial areas in New York City, once boasting more than 50 refineries located on its banks, including oil, petrochemical plants, fertilizer and glue factories, sawmills, lumber and coal yards. In addition to the industrial pollution that resulted from all this activity, the city began dumping raw sewage directly in the water in 1856. During World War II, the creek was one of the busiest ports in the nation. Various contaminated sites along the creek have contributed to the contamination at Newtown Creek.

In 2009, the Environmental Protection Agency began activities at the site pursuant to a federal law, commonly known as the Superfund Law, and recommended that Newtown Creek be listed on the National Priorities List of hazardous substance releases.

Along the banks at Newtown Creek sits a wastewater treatment plant, located in the Greenpoint neighborhood of Brooklyn, NY. The plant, also known as Newtown Creek, has gone through many changes over the years. Built in 1967, it now serves over 1M people in the greater NYC area of lower Manhattan, Brooklyn, and Queens.

PROBLEM

As the population of the area continued to grow, so did the needs of the wastewater treatment facility. The plant was outdated and environmentally unsound, so the New York State Department of Environmental Protection teamed with a group of architects, designers, and engineers, as well as the Newtown Creek Monitoring Committee (NCMC). NCMC is a volunteer, citizen oversight committee,

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PROJECT PARTNERS

Owner

New York City Department of Environmental Protection – New York, NY

General Contractor

Joint Venture of Skanska USA Civil (Slattery Skanska, Gottlieb Skanska, and Underpinning & foundation Skanska) – Maspeth, NY; Picone/McCullagh JV – Lawrence, NY; and Perini Corporation, – New York, NY

Design Engineers

Hazen and Sawyer – New York, NY; Greeley and Hansen – New York, NY; and Malcolm Pirnie, Inc – Fair Lawn, NJ

Subcontractors

Falco Construction Corporation – Brooklyn, NY; AJ Pegno Construction Corporation – Flushing, NY; and Silverite Construction – Hicksville, NY

PRODUCTS

Z-shaped Sheet Piles: 36,000 tons
H-Piles: 50,000 tons
24” and 36” Pipe: 20,000 tons

PROJECT TIME FRAME

1999 through 2014

approved by the City to represent the community’s needs and interests. Because of its proximity to the Superfund site of Newtown Creek, no migration of soils were allowed into the waters during and after construction. The project began in 1998, and was scheduled for completion in 2014.

SOLUTION

A team of environmental experts came together to create a plan, including architects, designers, and engineers. Nucor Skyline was brought in as a project partner to help with the problem of containing the contaminated soils.

The project consisted of an excavation site for the newly built digester eggs, as well as building a secant wall along the banks of the creek to contain the soils of the site from further contaminating the waterway.

Nucor Skyline’s engineering team was able to offer a solution that optimized the original design and was able to keep the project on task and save money with the suggestion of using a king pile wall. The ability to redesign on the fly and change drawings as needed was very beneficial. Nucor Skyline is located in Parsippany, NJ, close to the job site, which allowed the team to visit the site as needed and make necessary changes in a timely manner.

Z-shaped sheet piles, which are hot-rolled sheets with a Larssen interlock system, are recognized as the most watertight and the only interlock with published values for the hydraulic conductivity of the locks. Nucor Skyline sealed the sheet pile interlocks using a combination of seal welding and the Roxan™ system, which uses a hydrophilic sealant, to create a watertight barrier.