

GENEVA, IL WASTEWATER PLANT

The devil was in the details when it came to choosing protective coatings for an expansion and upgrade of the Wastewater Treatment Plant in Geneva, Illinois. The two-phase, \$15 million project was initiated in 1999 to meet enhanced water quality standards, replace obsolete equipment and keep pace with a growing customer base, according to Tnemec coating consultant Erik Otten.

Phase I construction consisted of new primary and secondary anaerobic digesters, a digester control building with sludge pumping and sludge gas control equipment, a new effluent sewer and remodels of existing buildings. Phase II, which began in the summer of 2003, involved improvements to raw sewage pumping facilities, the aerated grit tank, the grit washer, primary clarifiers, aeration tanks, the final clarifier, the return activated sludge pumping station, sludge storage building, excess flow chlorination/dechlorination facilities, excess flow structures, sidestream tank, piping and various electrical and mechanical equipment.

Series 66 Hi-Build Epoxoline, a two-component polyamide epoxy, was the workhorse for tanks, piping and other interior and exterior steel, as well as concrete masonry units (CMUs) in both phases of the project, Otten noted. Steel surfaces were prepared according to SSPC-SP10 near-white blast (immersion service) and SSPC-SP6 commercial blast (non-immersion). Concrete surfaces were prepared by abrasive blasting following SSPC-SP13 guidelines.

New concrete flooring on Phase I was clear-sealed with Series 201 Epoxoprime, a polyamine epoxy, and Series 662 Prime-A-Pell Plus, a siloxane water repellent, was applied to exterior brick throughout the plant. Series 54-660 Masonry Filler, a polyamide epoxy filler, with a topcoat of Series 66, was also used on interior CMU subject to corrosive fumes, high humidity and chemical contact.

"Phase I required application of a modified polyurethane used to protect the new concrete digesters and steel covers from H₂S gas permeation," Otten recalled.

"For Phase II, Series 210 Even-Flow SL was used to level and hide imperfections on all of the existing and new floors," Otten said. "Series 73 Endura-Shield, a two-component aliphatic acrylic polyurethane, was used as a topcoat to protect exterior steel against corrosive fumes, weathering and abrasion."

Overall, the 2,800 gallons of protective coatings used on interior tanks, piping, floors and exterior brick over both phases of the project have "held up very well," according to Jeffrey Price, wastewater treatment facility supervisor for the City of Geneva. Price described coatings used for the digesters in 1999 as "very durable."

FEATURED PRODUCTS

Series 54-660 Masonry Filler Series 264 Elasto-Shield
Series 66 Hi-Build Epoxoline Series 662 Prime-A-Pell Plus
Series 73 Endura-Shield
Series 201 Epoxoprime



PROJECT INFORMATION

Project Location
Geneva, Illinois

Project Completion Date
Summer 1999 (Phase I)
Summer 2003 (Phase II)

Owner
City of Geneva

Engineer
Baxter & Woodman - Crystal Lake, Illinois

Field Applicator - Phase I
Jetco, Ltd. - Prospect Heights, Illinois

Field Applicator - Phase II
Nikolas Painting - Bridgeview, Illinois

A total of 2,800 gallons of protective coatings were used to protect the interior tanks, piping, floors and exterior brick at the City of Geneva's Wastewater Treatment Plant.

