

This image of a Texas Shafts project from "Safety in Foundation Drilling," created for ADSC-IAFD and available on YouTube, is a graphic reminder of the critical importance of safety in construction.



PHOTO: COURTESY OF CONSTRUCTIONIMAGES.COM

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## Underground Today II

# Present and Future Challenges

Relying on materials and technological expertise to meet a variety of demands

By Karin Tetlow

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## Slide Rail System Provides Soil Support for Large Precast Tank Installation

A Southwest contractor needed a precast concrete cooling tank to be installed in three sections, each weighing about 90,000 lbs. The components required an excavation of approximately 40 ft long, 16 ft wide and 20 ft deep. The contractor's competent person classified the soil as a Type C-60 soil.

The size and weight of the precast sections of the tank formed the initial constraint that each successive decision would need to incorporate. The precast nature of the tank components also created a need for the excavation to be free span in order for an easy and efficient installation of the components. An existing building located 12 ft from one side of the excavation limited access to the site and needed to be protected during the installation process.

The contractor contacted National Trench Safety (NTS) to discuss possible shoring options for the project. After the presentation of a few systems, the contractor elected to use a site-specific engineered SBH slide rail system with tiebacks. The slide rail system would be installed progressively to prevent soil raveling and to help avert any adverse effects to the existing building. The slide rail system's tieback design would provide the free-span excavation required to install the precast components within the pit.

The contractor was able to quickly install the slide rail system and tieback system, which allowed the crew to move on to the tank installation. To address the jobsite working room limitations, the crew used a large crane to place the



The contractor used an NTS-engineered slide rail system for shoring a large free-span excavation.

precast tank components within the excavation.

The slide rail system performed very well. The contractor was able to quickly install the system, perform the necessary work and then easily remove the system once the project was completed. ♦

PHOTO: COURTESY OF NTS

## Waterproofing and Protecting an Underground Garage In the Midwest

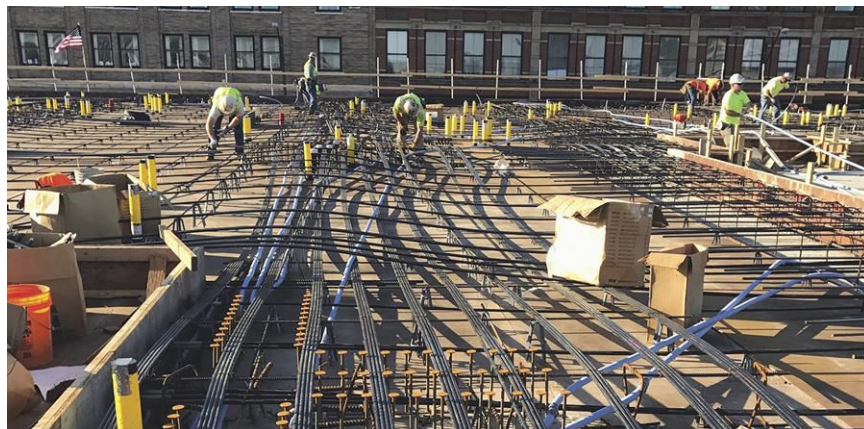
A partially barren intersection at Detroit Avenue and 25<sup>th</sup> Street between the Ohio City neighborhood and downtown Cleveland is being reborn into The Quarter, a substantial \$60-million, 250,000-sq-ft mixed-use

project. The development team led by the Snively Group is delivering retail spaces and a 194-unit apartment building with multiple amenities. Its post-tension concrete underground parking garage on 25<sup>th</sup> Street includes

180 below-grade tenant parking spaces and 75 aboveground spaces for retail customers.

For the parking garage, Xypex was selected to both waterproof and protect the concrete from chlorides and hydrocarbons typically seen in parking structures in the Midwest. Snively reviewed other crystalline materials but found Xypex had the testing and history it wanted for the high-profile project. The building required 2,300 cu yds of Xypex C-500 Admix concrete and Patch'n Plug (PNP) for sealing tie holes.

"We went out to Denver to see buildings that had used Xypex," says Snively Vice President of Project Management Greg Osborne. "We wanted to see evidence of the product performing, and we did. So far, we are big fans, and everything we've seen and experienced supports that." ♦



Xypex was used to waterproof an underground parking garage at The Quarter, the new \$60-million Ohio City development.

PHOTO: PETER DOUGHERTY



# The World Standard in Concrete Waterproofing by Crystallization

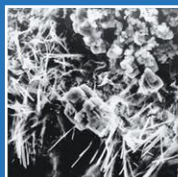
**NO  
EQUAL**



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Concrete  
(Untreated)



Xypex Crystallization  
(Initiated)



Xypex Crystallization  
(Mature)

XYPEX integral crystalline technology waterproofs concrete foundation structures as they're poured and cannot be damaged during installation or backfilling. Unlike membranes, Xypex is added to the concrete at the time of batching avoiding application errors. This sustainable technology also contributes to LEED credits. **When you select Xypex Crystalline Technology**, you've chosen the best... more than 40 years of independent testing, experience in over 90 countries, unmatched product and service standards ... *and still no equal.*

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