



Competition Natatorium Stabilization in Fairfax, Virginia

Problem

Since it opened in 1998, the Jim McKay Natatorium at George Mason University in Virginia has hosted numerous world-class swimming events that have showcased the talents of a long line of Olympic champions. The facility's competition pool measures 25 yards by 50 meters and is surrounded by an all-tile deck. In 2012, campus administrators noticed the formation of cracks in the pool deck after the pool had been drained for regular maintenance. Consulting engineers pinpointed the problem. The original Shotcrete walls of the pool were designed to sit atop properly drained soils. However, the western wall of the pool was under constant hydrostatic pressure from heavily saturated soils in the area that had permeated the pool walls and weakened the tile mortar bed.

Analysis

Concerned with the possibility of a shutdown at the natatorium, campus administrators began looking for solutions. Various options were considered to relieve the pool wall of the hydrostatic pressure, including the addition of permanent groundwater wells around the building perimeter, installing soil nails, injecting cementitious grout, and URETEK Deep Injection® (UDI). After reviewing all available options, the university called URETEK.

Solution

URETEK crewmembers arrived on the scene and began work by developing a site-specific injection plan to address the saturated soils at the west end of the facility. Crewmembers injected URETEK 486 Star® polymer into the soils beneath the natatorium, displacing water captured there while compacting and densifying the soil to provide adequate, long term support for the competition swimming pool. All work was completed during a break in the facility's normal schedule, so there was no interruption to regularly scheduled events.

Result

URETEK provided the perfect solution for the McKay Natatorium. UDI displaced saturated soil without increasing the load like cementitious grout, causing minimal disturbance to the natatorium's normal schedule of events. URETEK's cost effective procedure was completed in less than two weeks, allowing administrators at George Mason University to start the new semester with their premier swimming venue open and safe and ready for competition.

URETEK Deep Injection® (UDI)

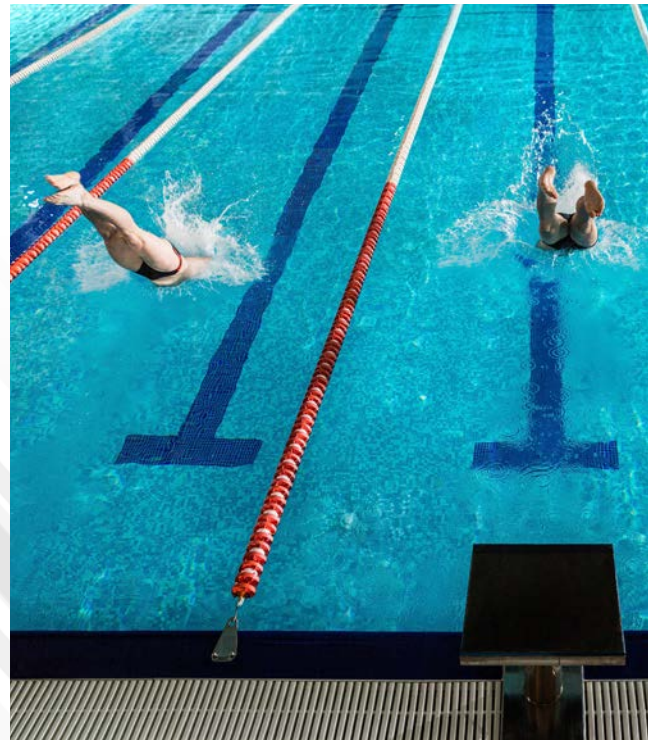
Widely referenced throughout our industry, UDI involves the injection of structural polymer into base and subgrade soils to increase the load bearing capacity. This is achieved by injecting the polymer through small holes drilled directly through the pavement structure to depths determined by site-specific analysis. Our URETEK 486 Star® material flows easily into voids and weak zones within the soil mass below. Through a controlled chemical reaction, the expanding polymer compacts surrounding soils and applies a controlled pressure on targeted areas of the affected pavement above. If needed, a multi-injection design plan is utilized to gently return the pavement to its original grade. The composite material quickly cures into a strong, dimensionally stable, and water-resistant geo-material, providing years of reliable service.

URETEK 486 Star®

URETEK 486 Star® polymer is a two-component, high-density, expanding thermoset polyurethane system. It was developed to be the ideal solution for under-sealing, void filling, lifting of settled pavement, stabilization and stiffening of weak soils, and for encapsulating and sealing buried infrastructure. URETEK 486 Star® is environmentally inert, non-toxic, and resists underground water erosion or weakening due to its industry-leading hydrophobic properties.



URETEK crews installed injection tubes in the pool deck at the Jim McKay Natatorium



Thanks to UDI, competition swimming resumed on schedule

URETEK

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