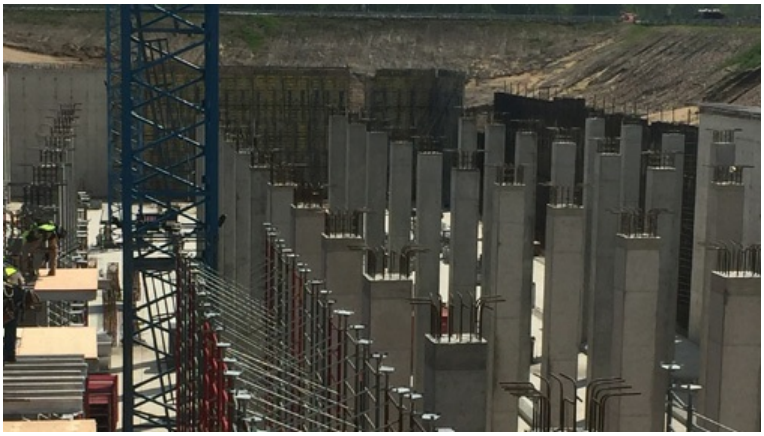
Historic Kentucky Park Constructs $60 Million Underground Basin

Twenty million-gallon basin project selects CONCERA® admixtures to overcome concrete placing challenges



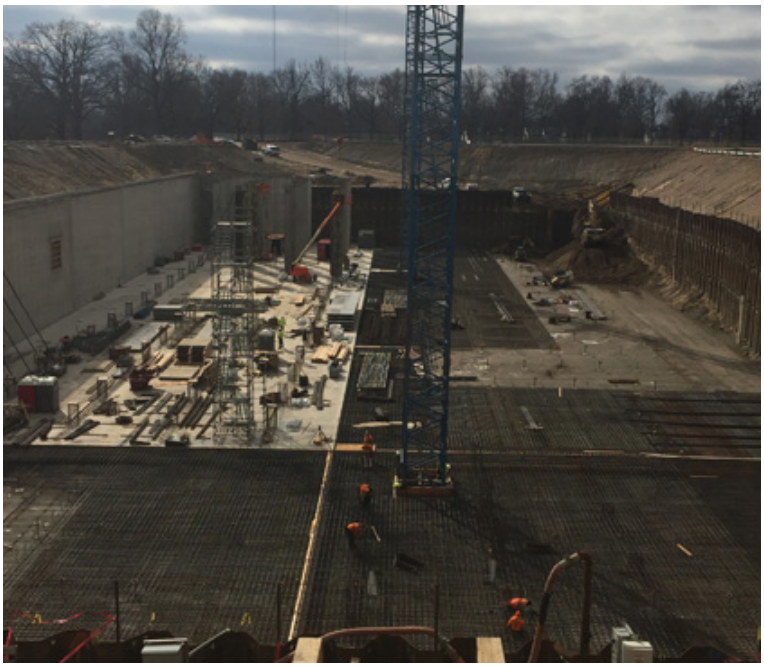
Project	Shawnee Park Basin, Louisville, KY
Concrete Contractor	Wilhelm Construction, Indianapolis, IN
Concrete Supplier	Allied Ready Mix Company, LLC, Louisville, KY
GCP Solutions	CONCERA® admixtures

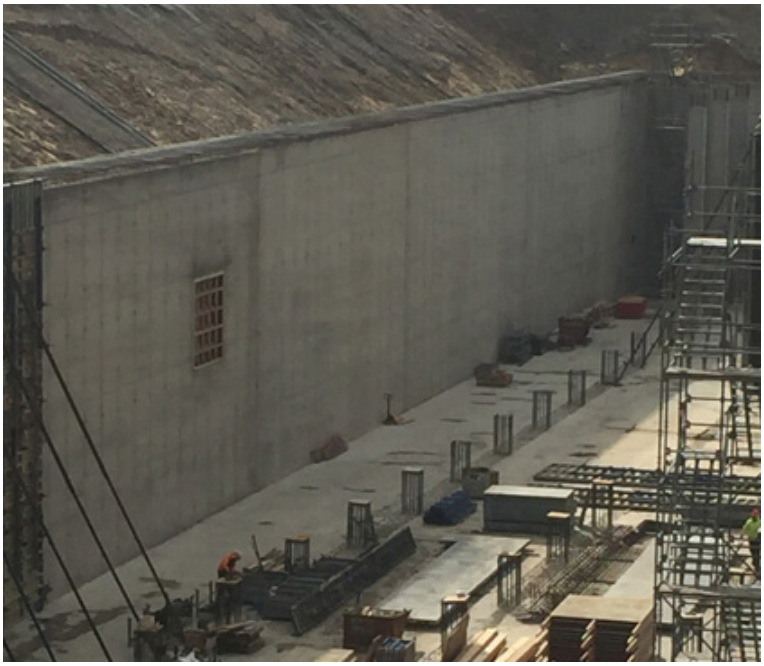
Project

Shawnee Park Basin Project protects Ohio River

The $60 million Shawnee Park Basin Project is part of a federal mandate to prevent waste water from pouring into the Ohio River. It is a watertight concrete structure designed to capture 20 million gallons (75,700m^3) of untreated wastewater during storm events, instead of it flowing into the Ohio River. The top of the basin is approximately 12 feet (3.7m) below grade with reinforced concrete that is more than 36 inches (0.9m) thick. Wastewater is stored in the basin until a storm subsides, then pumped to the nearest treatment center, treated and returned to local streams or to the Ohio River.

The Shawnee Park Basin Project will create a cleaner river, provide new park amenities and preserve the historic nature of Shawnee Park.





The size of the underground basin creates complex concrete challenges

One of Indiana's largest concrete contractors, Wilhelm Construction, was tasked with overseeing the quality control of the concrete for the project, including managing the mix design, temperature control and testing. The enormity of the basin's design required over 30,000 cubic yards (22,900m^3) of concrete. Placing the large amounts of concrete without any honeycombing or cracking was one of the biggest challenges Wilhelm Construction and the team faced.

Constructing an underground basin of this magnitude created daunting issues:

- Completing the placement of the large amounts of concrete efficiently, each pour taking 6-8 hours
- Completing the placement without any honeycombing or cracking
- Getting the concrete to properly flow around reinforcing steel rebars and wall ties

CONCERA®admixtures deliver exceptional control flow concrete.

When CONCERA®admixtures are added to conventional concrete, the result is a highly flowable, segregation-resistant concrete. This control flow concrete moves more easily than conventional concrete but comes to rest more quickly than self-consolidating concrete. For example, in graded slabs control flow concrete will not "run".

After careful consideration and many tests, Wilhelm Construction selected CONCERA®admixtures, and control flow concrete, as the best solution for the massive basin concrete project. In this project, the control flow concrete had a slump flow of 22 inches (559mm), which is less than most self-consolidating concrete. The concrete produced with CONCERA®admixtures flows easily, requiring only minimal energy to move. This flowability allowed trouble-free placement around the steel reinforcement designed into the Shawnee Park Basin.

Control flow concrete produced with CONCERA®admixtures provided the Shawnee Park Basin with unique advantages:

- The high flow properties allowed for easy placement of the concrete in the walls of the basin, properly flowing around the rebars and wall ties.
- More was accomplished each day since the concrete discharge and placement was significantly faster.
- Control flow concrete is created using a conventional mix design, so the material costs were lower than for self-consolidating concrete.

Control flow concrete provided the best of both worlds to the Shawnee Park Basin Project: Concrete that's easy to work with, but without high concrete production and quality control costs.

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