



Delivering Concrete Solutions

CASE STUDY

Yorktown High School

Arlington, VA



Yorktown High School, Arlington, VA

EE&K Architects Innovates with Integral Waterproofing to Solve a Tough Challenge for Yorktown High School

Structure:	High School
Application:	Grey Water Cistern
Owner:	Arlington Public Schools
General Contractor:	Hess Construction
Architect:	Ehrenkrantz Eckstut & Kuhn Architects
Civil Engineer:	ADTEK Engineers, Inc
Concrete Contractor:	Canyon Concrete Contracting
Ready Mix Provider	Superior Concrete (US Concrete)

“
Hycrete solved a really tough waterproofing challenge for us — at a lower cost and with a reduced environmental impact.”

Bill Griffin, AIA, LEED AP
 EE&K Architects

Introduction

Yorktown High School is a \$64,000,000 construction project. This 291,000 square foot educational facility will accommodate nearly 1,600 students. The Arlington Public School System is seeking LEED Silver Certification for the facility.

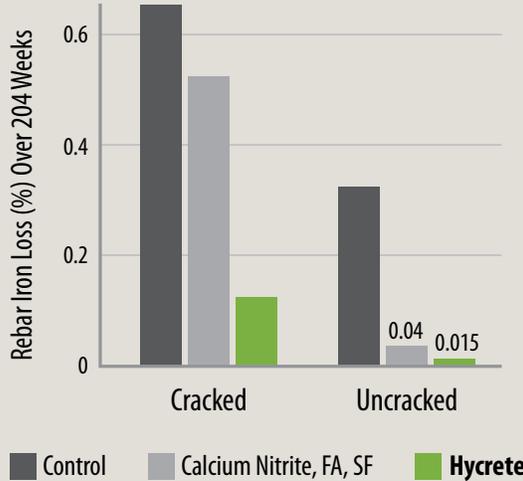
Challenge

A 240,000 gallon concrete cistern was to be installed to collect grey water for re-use throughout the building. The tank required waterproofing to keep collected rainwater in, for which roll-applied liquid membranes were planned. In addition, exterior sheet-applied bentonite waterproofing was planned to keep water out of the tank. Finally, due to concerns about corrosion of reinforcement from groundwater, corrosion inhibitors were to be added to the concrete. This approach proved both prohibitively expensive and virtually impossible to install in the high ground water conditions.

Solution

Hycrete’s hydrophobic solutions were successfully employed to waterproof the cistern inside and out. The presence of groundwater proved to be a non-issue for integral waterproofing that could be poured with the concrete. Membranes were eliminated, saving nearly \$2.33 per square foot for the school. The corrosion inhibition properties of the Hycrete admixture also replaced the need for other additives. Also, the Cradle to Cradle Silver Certification of the Hycrete materials enhanced the sustainability objectives of the project.

Corrosion Advantages of Hydrophobic Admixtures



Source: University of Massachusetts Independent Testing



Constant influx of groundwater made use of a bentonite waterproofing system almost impossible.



With Hycrete's integral waterproofing solution, a direct pour of concrete waterproofed the structure, in spite of the groundwater.

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We considered using silica fume in an effort to reduce water migration, as well as a corrosion inhibitor to protect the reinforcing steel. However, with Hycrete we could produce a concrete mix that was much easier to use, achieve all the required specifications and deliver a better quality concrete without typical silica fume cracking issues.”

Christian Warren, Sales,
Superior Concrete (a division of US Concrete)

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Hycrete's level of field service was impressive on this project. They really stand behind their product.”

Jim Vallie, Project Manager,
Hess Construction