

AquaBlok®

Installation Summary

Objective: Basin Rehabilitation

Location: Columbus, Ohio

Setting: City Park

Project Status: Completed Spring 2012



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Photo 1. AquaBlok placement from a bulk bag (standard shipping unit for bulk material) using a track loader and steel rakes to level of "float" material and promote uniform coverage at 10lbs/SF

Project Objective: Remedy persistent and significant water loss from a 0.9 acre basin in a highly manicured park setting.

Background: The pond at Goodale Park, dubbed "Ohio's first park," is overseen by the City of Columbus Recreation & Parks Department, and has a long and storied past dating all the way back to the 1870s. Now managed primarily for aesthetic appeal, the basin has experienced chronic water loss. Although modifications and other repairs have been attempted over the last 50 years, a balance could be reached through supplemental addition until late in 2010. At that time the basin was drained and a large stone fountain was erected in the northern lobe of the pond. Water losses increased after the pond was refilled to the point that desired water levels could not be maintained and a broader solution was deemed necessary.

Technical Challenges: The lack of easy site access and the existing design and construction of the basin made traditional methods of repair technically challenging and/or cost prohibitive. Mature trees, well-maintained turf, and a perimeter sidewalk complicated access using heavy equipment. A 2 to 4-foot compacted clay liner – with or without traditional granular bentonite amendments – would have required tremendous volumes from a material handling perspective (requiring a long construction timetable and significant expense to repair collateral damage). The basin's relatively shallow depths (5 to 6-feet, max at full pool) would have increased material handling even further because substrate would have needed to be removed from the bottom prior placement of compacted clay. The concrete vertical side walls of the basin would have been difficult to seal against using either resident clay or a synthetic ("rubber") liner.

AquaBlok Solution: AquaBlok® 2080FW#8 (PONDSEAL™) was utilized to seal the entire basin floor and to provide extra insurance around the newly installed stone fountain. The dry bentonite-coated aggregate was broadcast at 10lbs/SF (1.5" nominal dry material thickness) over 37,750 square feet. Additional product was placed at the transition between the basin bottom and the vertical side walls and around the fountain and light caissons.

Equipment Used: Flatbeds for material delivery; long-reach forklift for material transloading from shipping units (2,700-lb bulk bags); remote operated stone slinger truck and track loader for dry material conveyance; manual labor (equipped with steel rake to float material and insure uniform coverage).

Timeline: 20 tons of AquaBlok were delivered, transloaded into slinger truck, and placed around the fountain in one day (December 2011); the balance (190 tons) was delivered and applied using a track loader and manual labor over approximately one week (March 2012). One track loader with three laborers manually leveling material with rakes applied 14 to 15 tons per hour with the material staged directly adjacent to the basin.

Results: The AquaBlok application, in conjunction with a roll-on sealant to the vertical side walls and a membrane apron around the perimeter of the fountain (bedded into AquaBlok) has reduced water losses from a maximum of twelve vertical inches per 24-hours to an average loss of approximately ½-inch per 24-hour period – a rate consistent with losses associated with evaporation.



Photo 2. An aerial overview of the project site, Goodale Park (Columbus, OH), prior to drawdown and construction of the stone fountain (May 2010)



Photo 3. Bulk bags of AquaBlok being staged for application either by a slinger truck (see Photo 4) or track loader (see Photos 1 and 5) – standard shipping units 2,400-2,700lbs per bulk bag



Photo 4. AquaBlok placement from a shore-based stone slinger truck to fortify the area directly adjacent to the newly installed fountain (maximum reach ~75' from back of truck)



Photo 5. AquaBlok placement from shipping unit (reinforced nylon bulk bag) using a track loader and steel rakes to level or “float” material and promote uniform coverage at 10lbs/SF



Photo 6. Basin overview immediately following completion of AquaBlok application (March 2012)



Photo 7. Basin overview following water addition (April 2012)



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Last Revised: May 2016