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Danny Santos
Vice President
Potomac Waterproofing



EPRO Geo-Seal 100 Provides Rapidly Installed Waterproofing & Contaminant Barrier for Large Multi-Use D.C. Redevelopment

Collection 14, located in Washington, D.C.'s 14th Street Corridor, is one of the most significant Washington landmark redevelopment projects. The block-long redevelopment required the purchase of multiple landmark addresses, including the former Martha's Table headquarters, to create a mixed-use project featuring residential, retail, office, and events & art space. Collection 14 integrates and preserves historic facades and historical structural elements into the new building with an inviting streetscape that embraces positive change in the neighborhood.

The project consists of a one-story below-grade basement that extends approximately 22-feet below ground surface with a foundation using zero lot line construction. A complex Support of Excavation (SOE) system utilized soldier pile lagging with temporary raker supports and underpinning to support existing facades and an existing structure along the southern edge of the excavation. The SOE system also included a back-lagging condition that consisted of installing timber laggings on the backside of

the soldier piles. The back-lagging condition, rakers, and underpinning required custom waterproof detailing to the SOE system to ensure watertight protection.

The foundation includes a continuous, thickened mat slab that might encounter groundwater accumulation under the foundation. A fully encapsulated, bathtub waterproofing system was required to protect the foundation from the buildup of hydrostatic pressure and groundwater infiltration.

Residual contamination presented another challenge to protecting the subsurface building envelope. The source of residual contamination was a former gas station and former adjacent dry cleaner. The site conditions established the need for a waterproofing and contaminant barrier system. EPRO was able to confidently address the challenging conditions due to its long history of providing solutions for sites impacted with petroleum hydrocarbons, chlorinated solvents, and shallow groundwater. EPRO developed its systems



Hand detailing around raker.



Installation of Geo-Seal® BASE and Geo-Seal® CORE on underslab and below grade walls.



Rebar installation after system installation is complete.

so they can be scaled up or down to meet project-specific site conditions; this approach gives users the ability to dial in the ideal level of protection.

The Washington, D.C. Department of Energy and Environment (DOEE) reviewed and approved EPRO's Geo-Seal 100 System to protect the structure from water and environmental contamination. Geo-Seal 100 is a 96-mil field-installed composite membrane system consisting of a base 18-mil HDPE geomembrane (Geo-Seal® BASE), 60-mils of polymer modified asphalt (Geo-Seal® CORE), and a protective 18-mil HDPE geomembrane (Geo-Seal® BOND). The Geo-Seal system provides an ideal blend of durability, constructability, and chemical resistance, and the system has been rigorously tested to determine its ability to protect from environmental contamination. Geo-Seal 100 was selected over a 46-mil HDPE membrane with pressure sensitive adhesive. EPRO provided a ten-year Labor and Material warranty, which is a standard offering in their E.Series warranty program. EPRO offers a unique warranty offering, as warranties are available for site contamination in addition to waterproofing. This one of a kind program provides additional peace of mind to building Owners and Developers.

While Geo-Seal is a cost-efficient alternative to traditional sheet systems, it is very resilient to the construction process. "In addition to being competitively priced and less labor-consuming than other systems, the Geo-Seal system is very robust. As an installer, we have peace of mind that the system is not

prone to damage as we are less concerned with damage control after the barrier has been installed. Most failures in waterproofing occur from damage to the membrane after the installation has occurred," says Danny Santos, Vice President of Potomac Waterproofing based in Manassas Park, VA, an E.Assurance certified EPRO applicator.

EPRO's Geo-Seal systems are also resistant to damage caused by rainfall after installation. "One of the great advantages of using Geo-Seal 100 for this project was that the system could be subjected to rain after installation. The membrane was exposed to heavy rain and was not damaged or preactivated like traditional bentonite sheet membranes," says Paul Connors, President of Connors Group, who represents EPRO in the Washington, D.C. market.

Over 65,000 square feet of Geo-Seal 100 was installed with 15,000 square feet of Geo-Seal applied blindside on shoring foundation walls and 40,000 square feet of Geo-Seal applied under the reinforced mat slab. The project was locally supported by EPRO's representative firm, Connors Group, and field installation training was provided to Potomac Waterproofing by EPRO.

With a historical track record of providing solutions for complex sites, EPRO is expanding its presence in the Mid-Atlantic area by offering a suite of systems to address a variety of site conditions and project types.