CASE HISTORY Roystone Apartments, Seattle, WA

EPRO is at the forefront of urban redevelopment efforts, providing solutions for waterproofing and contaminant vapor mitigation that are safe, effective, and economical.

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Roger Woods
Site Superintendent
Pavilion Construction.

Project Size: 35,000 SF
Condition: Watertable, BTEX contaminated groundwater
General Contractor: Pavilion
Architect: Jackson Main
Waterproofing Consultant: BEE Consulting
Environmental Consultant: Riley Group
Applicator: Emerald City
System: PreTak

Vibrant Cities, a Seattle based multi-family real estate developer, has begun construction on the Roystone Apartments project, an eight story mixed use apartment building in the rapidly developing Uptown neighborhood of Seattle's lower Queen Anne which will include roof decks and ample amenities to support the added residents to the local community. The Roystone Apartments (74,096 SF) will have 93 units with ground floor retail and a one story below grade parking garage. The project has required a unique collaboration between all parties involved due to the site's previous history.

A Texaco gas station operated on the Roystone site from 1923 to 1993. In 1986 the Washington Department of Ecology responded to complaints of gasoline odors at the adjacent apartment complex. An investigation conducted from 1986 to 1990 revealed the gas station as the source. "Many dense urban locations struggle with the dirty legacy left behind by the corner gas station. Failed antiquated underground storage tanks (UST), some originally buried as far back as the 1920's and 30's, leak diesel and gasoline into adjacent soils causing an underground plume of contaminated soil and groundwater. With rising demand for more urban residential development, effective contaminant mitigation methods must be employed to repurpose these properties." explains principal Robin Murphy of the project's Seattle firm Jackson Main Architects. Two wells were installed to remove petroleum from groundwater, seven underground storage tanks removed and a soil vapor extraction and groundwater recovery system put in place. Texaco's successor, Chevron Environmental Management Company (CEMC), upgraded and operated the system from 2003 to 2008 under Ecology's Voluntary Cleanup Program.

Pavilion Construction, Roystone's general contractor, began site cleanup March, 2020. In addition to the seven USTs already removed from the site an additional three USTs containing diesel and waste oil were removed. "In total, approximately 16,235 tons of petroleum-contaminated soil, 62 tons of soil containing solvents, and 1.47 tons of soil containing waste oil were removed and disposed off property. Site logistics and careful planning was essential for the proper execution of these site contaminant clean up efforts." site superintendent Roger Woods with Pavilion explained. "All soil containing concentrations of contaminants above allowable MTCA soil cleanup levels have been removed from within the Property boundaries."

Installation of rebar against vertical blindside application of the PreTak membrane.

Mat slab reinforcement installed over PreTak membrane applied on grade.

Shotcrete application against installed PreTak membrane.

Considering the site is also shallow groundwater, the project design team, BEE Consulting, was tasked with the selection of an appropriate waterproofing and contaminant vapor intrusion system. After careful consideration, the design team approved EPRO's PreTak waterproofing and contaminant vapor intrusion membrane. EPRO's PreTak 48 mil thick high density polyethylene, fully adhered pre-applied membrane was ideal for both waterproofing protection in hydrostatic conditions while offering robust chemical contaminant vapor barrier performance. EPRO's history of performance and experience with projects of similar scope and complexity helped guide the decision.

EPRO PreTak membrane was installed at all under slab locations directly over compacted fill and vertically against the soldier pile lagging support of excavation (blindside waterproofing). The blindside assembly consisted of EPRO e.drain drainage composite with embedded filter fabric against soldier pile lagging with PreTak mechanically fastened to the lagging. Sheet metal field fabricated "box outs" detailed with PreTak membrane were installed over all tie-backs. To accommodate the use of structural shotcrete for the below grade foundation walls, all seams were reinforced with an additional application of four inch wide PreTak PreTape. After concrete is applied to the surface of PreTak, PreTak's specially formulated pressure sensitive adhesive integrally adheres the surface of the membrane to the fresh concrete with over 20 pounds per inch of adhesive bond strength. This fully adhered waterproofing and contaminant vapor intrusion barrier system effectively eliminates the potential for lateral water migration between the installed membrane and concrete substrate while effectively protecting the structure from residual subsurface contamination.

Project experience with EPRO PreTak has been positive. "Not only was EPRO PreTak a solid performance choice for this project, it was the most cost competitive option that we evaluated. EPRO's approved applicator Emerald City Waterproofing was able to provide cost savings to a competing bidder with a system claiming similar performance." Pavillion's superintendent Roger Woods explains. "Additionally, EPRO's onsite technical assistance has been instrumental in helping solve the inevitable site challenges as we have progressed on this project."

EPRO PreTak is an entire below grade building envelope solution that has provided an effective waterproofing and contaminant vapor barrier membrane necessary to rewrite the legacy of this Seattle corner gas station to serve the community for many years to come, safely, effectively and economically.

Original Texaco station that operated on site for 70 years from 1923 - 1993.