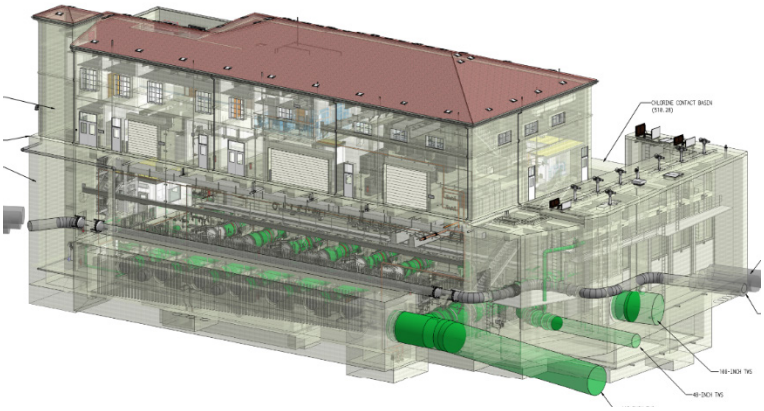
UC Berkeley Geosystems Group
Wednesday Lecture Series

Wednesday, September 27, 2023
12:10 – 1:00 PM
Lecture Room: 406 Davis Hall

Orinda Water Treatment Plant Design and Construction

Sarah Wilson and Ashim Gajurel, Delve Underground



The Orinda Water Treatment Plant was built in 1935, is EBMUD's largest and only 24/7, year-round plant around, serving nearly 1 million customers in the East Bay. This project will add a state-of-the-art ultraviolet disinfection system and chlorine contact basin to the plant. The project has been under construction for the past year and is targeted for completion in 2027.

The mass excavation for the UV/CCB (disinfection building) is about 200 feet x 140 feet x 60 feet, requiring more than 200 secant piles for the support of excavation. The SOE also requires three rows of tiebacks up to 80 feet in length. Three additional structures require the installation of SOE for this project. The project also includes four tunnel drives ranging from 60 to 120 inches in diameter through variable ground conditions, requiring pre-excavation support and compensation grout pipes for settlement mitigation. Important, sensitive structures exist in the vicinity of the work that need to be protected from the new construction; therefore, this site is heavily monitored with a comprehensive geotechnical instrumentation program.

This presentation will discuss various geotechnical, tunneling, and monitoring components of the project and the construction progress on site. The speakers will also discuss various challenges that have arisen during construction and how they are being mitigated.

Sarah Wilson is a Principal Tunnel Engineer with the firm in San Francisco. She has 24 years of experience in underground design, project management, and construction management, primarily on large transit and water programs. Sarah has served on several industry committees and boards, including the UCA of SME's Executive Committee, the American Rock Mechanics Association, and the firm's own board of directors. She holds a BS in Civil Engineering from Drexel University and an MS in Geotechnical Engineering from the University of California at Berkeley, and she was recently elected to membership in The Moles. In 2020, Sarah served as project lead for a pedestrian bridge the firm built in partnership with Traylor Bros. and Bridges to Prosperity in Uganda.

Ashim Gajurel is a Senior Staff Engineer with the firm in Walnut Creek. He is overseeing the geotechnical instrumentation program, reviewing grout plans and ground support plans, and providing quality assurance observations during construction for this project at Orinda. He has more than 5 years of experience in the design, analysis, and modeling of various geotechnical and tunneling structures. He holds a BS in Civil Engineering from Kathmandu University in Nepal and an MS in Geotechnical Engineering from the University of Texas at Austin.