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Geotechnical Challenges at Encore Boston Harbor

Mary B. Hall, P.E.
Senior Principal, GZA

Michael P. Smith, P.E.
Project Manager, GZA

Tuesday, December 11, 2018

Tufts University
Registration and Dinner: Science & Engineering Atrium, 200 College Ave, Medford, MA
Seminar: Robinson Hall Room 253, 212 College Ave, Medford, MA
5:30 PM – 9:00 PM (Dinner Included)

The site's approximately 32-acre property was occupied by the Monsanto Chemical Company and other chemical companies from the late 1800s until the late 1960s. During this time period, the local salt marsh was filled, extending the original shoreline out toward and around an island within the Mystic River. The buildings on the property were razed in the 1970s and the property used primarily as a material storage and staging yard since the mid-1990s, when rock and low-permeability muck (tunnel muck) from the construction of the Deer Island Outfall project were stockpiled on it and later spread out.

The Encore Boston Harbor resort consists of a 29-story tower as well as a low-rise structure across the remainder of the building's footprint. With a large portion of the building footprint constructed over a multilevel below grade garage, groundwater control was an important issue for both construction and for building design. Given the variety of building loads and highly variable subsurface conditions across the site, multiple foundation types were utilized for the building's foundations including: load bearing elements to support the tower; slurry walls and mat foundations to support the building across the below grade garage; precast prestressed concrete piles and drilled micropiles to support building across the at-grade portions; and rock anchors to help resist hydrostatic uplift pressures on the below grade garage.

The project also included the construction of a new waterfront and landscaped open space. These site improvements included demolition of historic shoreline features, installation of steel bulkhead and pile supported wharf structure as well as a floating dock system. Due to the soft soils at the site, a timber pile supported load-transfer platform with lightweight fill was used for raises in grade behind the bulkhead and EPS foam blocks were used to raise site grades in the landscape areas to mitigate long-term settlement.

Registration Deadline: Wednesday, December 5, 2018

$75 Members, $85 Non-Members
$65 Public Sector Members, $75 Public Sector Non-Members
$25 Senior Members (65+), Students

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This presentation provides 1 Professional Development Hour (PDH)

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Information/Registration:

Register to attend this meeting and pay by credit card online at bit.ly/EncoreBostonHarbor. To register online for an event at the BSCES member rate you must login using your BSCES assigned username and password. If you do not know your BSCES member login information call 617/227-5551. You can also register for this event by mail or email. To do so, download and complete a BSCES Event Registration Form and follow the submission instructions. Cancellations received after December 5, 2018 and no-shows will be billed.

Speaker Bio

Mary B. Hall, P.E.

Senior Principal, GZA

Ms. Hall has been with GZA for over 30 years, previously managing the firm's Boston office. A geotechnical engineer by training, Hall specializes in evaluating geotechnical and environmental conditions and their potential impact on development and infrastructure projects for both private and public clients. She is a registered Professional Engineer in several states and earned her Bachelor of Science in Civil Engineering from Bucknell University and her Master's Degree in Civil Engineering from University of California at Berkeley. She is a past President of the American Council of Engineering Companies (ACEC) of Massachusetts where she was on the board for 10 years, an ACEC Fellow and a past Trustee of the Boston Groundwater Trust.

Michael P. Smith, P.E.

Project Manager, GZA

Mr. Smith is a project manager and geotechnical engineer with 11 years of experience in geotechnical design and consulting. He is a registered Professional Engineer in Massachusetts and earned his Bachelor of Science and Master of Science in Civil Engineering from University of Massachusetts Lowell. His experience includes geotechnical and environmental site investigations, environmental remediation, geotechnical analyses, preparation of reports and contract documents and construction oversight. He has worked on a variety of projects that include private developments, municipal and industrial facilities, pipelines, tunnels, dams/levees, hazardous waste sites, and bridges.