



## Vancouver Geotechnical Society

A Local Section of the  
Canadian Geotechnical  
Society

[www.v-g-s.ca](http://www.v-g-s.ca)

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## NOTICE OF UPCOMING CCLT TECHNICAL PRESENTATION Tuesday, May 22, 2018

**TOPIC:** Lessons Learned for Ground Movements and Soil Stabilization from  
The Boston Central Artery

**SPEAKER:** T.D. O'Rourke, *Thomas R. Briggs Professor of Engineering, Cornell University*  
Tom O'Rourke is the Thomas R. Briggs Professor of Engineering in the School of Civil and Environmental Engineering at Cornell University. He is a member of the US National Academy of Engineering, a Distinguished Member of ASCE, an International Fellow of the Royal Academy of Engineering, a Member of the Mexican Academy of Engineering, and a Fellow of the American Association for the Advancement of Science. He has received a number of distinctions for his research and teaching, including the Stephen D. Bechtel Pipeline Engineering and Ralph B. Peck Awards from ASCE. He gave the 2009 Rankine Lecture and 2016 Terzaghi Lecture.

Tom served as President of the Earthquake Engineering Research Institute (EERI) and as the chair or member of many professional society committees. He received the George W. Housner Medal in 2016 for contributions to earthquake engineering and has authored or co-authored over 380 technical publications. His research interests cover geotechnical engineering, earthquake engineering, underground construction technologies, engineering for large, geographically distributed systems, and geographic information technologies and database management. He has served on numerous government advisory boards, as well as the consulting boards or peer reviews for many projects associated with highway, rapid transit, water supply, and energy distribution systems, and has acted as an advisor on more than 120 projects in 13 different countries.

**CONTENT:** The Boston Central Artery and Tunnel (CA/T) was the largest and most complex U.S. construction project in the last 25 years for which new technologies were developed and applied at an unprecedented scale. One of these technologies involves mass stabilization of weak clay by systematic deep mixing with cementitious products. On the CA/T, over 500,000 m<sup>3</sup> of marine clay and organics were stabilized with the deep mixing method (DMM). The method was used under difficult conditions that included reinforcement of basal clay at an ongoing, unstable excavation and widespread application on a crowded site with especially deep, low-strength clays and many surrounding facilities.

Professor O'Rourke will provide an overview of the CA/T, including its cost and contributions to the urban regeneration of Boston. His presentation includes a case history covering ten years' experience with ground stabilization on the CA/T. Topics addressed include water pressure distribution behind DMM walls, statistical characterization of soil-cement properties, quality control/quality assurance procedures, comparison of measured and numerically simulated deformation in clay stabilized with various configurations of soil-cement elements, and shear modulus degradation characteristics of in situ soil-cement. Recommendations are made for soil-cement properties, installation procedures, analytical modeling, design, and inspection.

**DETAILS:** **Location:** Executive Inn, 4201 Lougheed Highway, Burnaby, BC V5C 3Y6  
**Social Hour:** 5:30 to 6:30 pm (drinks available at the hotel bar)  
**Technical Presentation:** 6:30 to 7:30 pm (No need to RSVP)  
**Dinner:** 8:00 pm (\$20 will be charged for dinner). If you would like to stay for dinner, please RSVP to Tim Morton via email ([timothy.morton@ghd.com](mailto:timothy.morton@ghd.com)) or at the door.