



**SLURRY WALL TECHNICAL LECTURES:**  
“Innovative Geotechnical Construction Techniques on the WTC  
Redevelopment Project and on Projects in NYC Vicinity”

**Tuesday, June 10, 2008**  
**THE MCGRAW-HILL COMPANIES, INC. BUILDING**  
**AUDITORIUM - 2<sup>nd</sup> FLOOR**  
**1221 AVENUE OF THE AMERICAS, NEW YORK, NY 10020**



**Lecture Information:**

**Redevelopment of the World Trade Center Site:  
A Geotechnical Perspective**

*John S. Lizzo, P.E., Port Authority of NY & NJ*

Lecture will focus on the geotechnical aspects of the redevelopment of the World Trade Center (WTC) site for the projects underway and those still in planning. The lecture will describe the Port Authority's facilities in the region and the history of the WTC site. Discussion of the many geotechnical related challenges and how a sophisticated 4D modeling procedure was adopted for planning and designing the various excavation and foundation structures will also be included.

**Slurry Wall Construction at the World Trade  
Center Site, Now and Then 40 Years Apart:  
Similarities and Differences**

*Arturo L. Ressi di Cervia, Ph.D., Kiewit Eastern District*

A comparison of two slurry wall projects built on the same site forty years apart. The speaker will focus on what worked and what did not in the old project and how that experience influenced the choices made in the new one. Since ground and site conditions are the same, this is a unique opportunity to examine changes in design, equipment and construction practices and also to see what has remained the same in slurry wall construction.

**Slurry Wall Top-Down Construction in a Small Site  
with a Difficult Working Environment**

*Richard Crockford, M.I.C.E., Nicholson Construction Company*

Clean, unencumbered building sites are becoming rare in urban environments. Construction techniques must overcome the remnants of existing foundations, close working quarters and the protection of adjacent buildings and MTA subway. A project case history will be presented that covers the construction of a three level, top-down constructed slurry wall and load bearing elements used for the foundations of the N.Y. Law School in lower Manhattan. Panels and Load Bearing Elements were excavated about 100-feet deep into bedrock and continuously monitored adjacent to adjacent shallow founded masonry structures that presented a severe planning nightmare to any contractor. The challenges and logistics for cage fabrication and removing obstructions and utilities related to the installation of slurry wall panels, load bearing elements and toe grouting on this congested site will be discussed in detail.

**Secant Pile Wall Construction at the WTC Site**

*John M. Stanbury, Underpinning & Foundation Skanska Inc.*

Discussions will include a brief overview of the history of secant walls, means and methods and installation techniques. Different types of drill rigs, equipment and drilling tools in various geologic formations will also be discussed. The speaker will present foundation wall applications with illustrations of several case studies of various recent secant pile wall projects in lower Manhattan.

**Implementation of Geotechnical Construction  
Techniques on the WTC HUB Project**

*John D. Wise, P.E., Nicholson Construction Company*

A look at the various geotechnical construction techniques being used to support the MTA 1&9 Subway Line, East Bath Tub Diaphragm Wall, and temporary support of excavation wall systems for the excavations of future Towers 2, 3 & 4. The challenges and logistics related to the installation of micropiles, tiebacks, and jet grouting on this extremely active and congested site will be discussed in detail.

**Ground Freezing for City Tunnel No. 3 Shaft  
Excavation & Construction**

*John F. Donohoe, is Chairman and former CEO and  
President, Moretrench American Corporation*

Discussion on using artificial ground freezing methods to create the excavation at five shaft locations in mid-town Manhattan. Scheduled to be completed in 2020, City Water Tunnel No. 3 will eventually span more than 60 miles, representing the largest capital construction project in New York City's history to date. The new tunnel system is designed to improve distribution capability and meet the ever growing demand on the existing, water supply, allowing the NYC Dept. of Environmental Protection to inspect and repair the active Tunnels 1 and 2 for the first time since they were put into service in 1917 and 1936 respectively. The tunnel alignment lays hundreds of feet below ground in the ancient metamorphic, granitic rocks underlying the city, with many of its deep, vertical access shafts rising through glacial deposits and water-laden sands above bedrock. The shafts are situated in the dense urban environment which they serve; most must be located within confined spaces available in congested city blocks.

## Speaker Information:

**John S. Lizzo, P.E.**, is a Principal Engineer for the Port Authority of NY and NJ, where he has worked for the last 24 years. During his time at the Port Authority he has worked on projects for all of the Port Authority facilities. Prior to his assignment for the WTC Reconstruction, John worked on the port facilities on such projects as; the construction of the Imported Automobile Marine Terminal, deepening of berths at Port Newark and Elizabeth Port Authority Marine Terminal, and the expansion of the Howland Hook Marine Terminal. For the last 5 years John has been working on the WTC reconstruction. Currently John's primary project is the design and construction of the new east basement between Greenwich St. and Church St. by slurry trench construction, while also supervising the review of designs by other agencies and tenants constructing at the site. He is a licensed Engineer in the State of New York, and received his Bachelor's Degree and Master's Degree from the Cooper Union For The Advancement Of Art and Science.

**Arturo L. Ressi di Cervia, Ph.D.**, is Special Projects Executive for Kiewit Eastern District. He has more than 40 years of extensive management and field experience in innovative work in the construction of slurry walls and trenches, load bearing elements, piling, jet grouting and soil improvement techniques. He was formerly Director and President of ICOS Corporation of America and Treviicos Corp. He has been a leader in development of the slurry wall practice in the U. S. and worldwide. Mr. Ressi has a Doctorate in soil mechanics and has authored numerous papers and lectured on project case histories, history, development and latest technologies in slurry wall/trench construction and other geotechnical applications. He is a corporate member of the DFI and is an active member of the Slurry Wall/Trench committee.

**Richard Crockford, M.I.C.E.**, is the Regional Manager for Nicholson Construction in the New York and New Jersey area. He has over 20 years of Geotechnical design and construction experience. As a Director of Keller Ground Engineering in the UK, Richard developed extensive knowledge in piling, ground anchors, slurry walls, soil mixing and all forms of grouting. He came to the US in 2005 to work with Nicholson and has been involved in all of these activities since then, most recently in the underpinning of the 1 & 9 subway line and the support of the east basement slurry walls at the World Trade Center. Richard is a Chartered Engineer, registered in the UK and has contributed to both ASCE and DFI seminars and committees since coming to America.

**John M. Stanbury**, Project Manager, joined Underpinning & Foundation Skanska in 2004. He recently completed the Dey St. Concourse project which involved secants, micropiles and jet grouting. He is also involved in a secant pile wall project that is on-going in the WTC-HUB. Mr. Stanbury has completed several successful secant pile wall projects in mid-town and lower Manhattan. He has a BA degree from Lafayette College and is a board member of the International Association of Foundation Drilling's Northeast Chapter.

**John D. Wise, P.E.**, Senior Vice President, joined Nicholson Construction Company in 1988 and has over 19 years of heavy construction experience in the foundation industry. He is currently in charge of Nicholson's east coast operations, where he has total responsibility for the design, planning, budget and construction for three of the company's District offices. Mr. Wise has managed dozens of geotechnical construction projects in the greater New York Metropolitan area since 1991 including work on the WTC Recovery Project as well as the ongoing work for the WTC-HUB. He has a BS in civil engineering from Carnegie Mellon University, a MS in civil engineering from the University of Pittsburgh and holds engineer's licenses in several states. He is a member of the American Society of Civil Engineers and the National Society of Professional Engineers.

**John F. Donohoe**, Chairman, joined Moretrench American Corporation in 1964, immediately after graduating from the University of Notre Dame with a Bachelor of Science degree in Civil Engineering. Over the course of a long and distinguished career with Moretrench, Mr. Donohoe advanced through the company to ultimately hold the positions of President and Chief Executive Officer, as well as his current position of Chairman. He has been an innovator, noted expert and author on dewatering systems. He has been involved in numerous groundwater control and geotechnical projects, notably ground freezing for tunnel jacking beneath Boston's South Street Station during the Big Dig Central Artery Tunnel project. Mr. Donohoe is active in the civil engineering community and has written and presented a number of technical papers. He has also served in executive capacities on the boards of several professional organizations including the Moles and the Construction Institute of ASCE.

## Transportation Information

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Facility is between 48<sup>th</sup> and 49<sup>th</sup> Streets. Entrance is on 49<sup>th</sup> Street side; go to escalators on your right to second floor. Seminar will be in auditorium.

Parking: Sunshine Parking on 48<sup>th</sup> Street across from facility.

Transportation: Facility close to B, D, V, F, N, R, W & No.1 trains. For further transit information go to: [www.mta.info/nyct/maps/submap.htm](http://www.mta.info/nyct/maps/submap.htm)

