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ReStructure 2.0 Webinar Series

Sala Stampa - Aula Magna – Convention Center Università della Calabria

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Foundation Performance of Millennium Tower In San Francisco, California

Abstract: The Millennium Tower is a 58-story reinforced concrete building that was constructed in San Francisco, California between 2005 and 2009. The Tower is founded on an embedded pile-supported mat with pile tips bearing in dense marine deposits that overlie an over-consolidated marine clay layer known locally as Old Bay Clay. This clay layer experienced stress increases from Tower self-weight and from multiple episodes of de-watering between 2006 and 2018 at the Tower site and neighboring sites. Settlements of the Tower foundation have been measured since 2006 and lateral deflections of the Tower have been inferred and measured since 2009. Available information on this case history include geotechnical site conditions and data from a monitoring program that tracked foundation settlements, Tower tilt, groundwater levels at the Tower site, and ground inclinations over time. This presentation will present the case history and its significance, discuss the ground deformation mechanisms that caused the observed movements, describe the degree to which the movements can be predicted, and discuss lessons from this case history for the design of deep foundations for tall buildings in San Francisco and geologically similar regions.

Presenter Bio-Sketch: Jonathan P. Stewart is a Professor in the Civil & Environmental Engineering Department at UCLA, where he has been a faculty member since 1996. His technical expertise is in geotechnical earthquake engineering and engineering seismology. The work of his research group has impacted seismic guidelines and policy nationally and globally. Examples include the US National Seismic Hazard Model and recommended procedures for the seismic assessment of structures. He is a former Chief Editor for the Journal of Geotechnical and Geoenvironmental Engineering and Earthquake Spectra. He currently serves on the EERI Board of Directors, University of California Office of the President Seismic Advisory Board, USGS National Seismic Hazard Model Steering Committee, and Co-Chair of GEER, among other positions. As registered Professional Engineer in California, he maintains an active consulting practice, advising private and government entities on issues in geotechnical engineering and earthquake engineering.

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