PURDUE UNIVERSITY

Lyles School of Civil and Construction Engineering

19th C.W. Lovell Distinguished Lecture

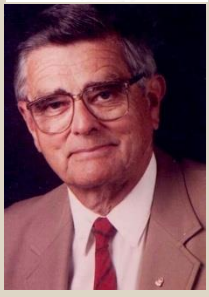
4:30 pm, Wednesday, September 24th, 2025
Burton D. Morgan Center for Entrepreneurship
Room 121

Professor Jonathan P. Stewart

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.

C. W. LOVELL DISTINGUISHED LECTURE



Professor Emeritus C. W. “Bill” Lovell was a native of Louisville, Kentucky, and received his BCE from the University of Louisville. He served in the U.S. Navy Construction Battalions (SeaBees) during World War 2, and taught at the University of Louisville after the War. In 1948, he came to Purdue University, and he remained in that employment until 2012, receiving MSCE and Ph.D. degrees in the process. His service in Civil Engineering extended over 48 years, including major professorship for 60 theses and authorship for almost 200 papers. During his distinguished career at Purdue University, Prof. Lovell was major professor to 112 students, 60 of whom wrote research theses, and published in excess of 200 papers. His research interests were broad and varied including soft rocks (shales), compaction and compacted properties, soil fabric and pore size distribution, slope stability and erosion, cold regions, pavements, and uses of waste materials in geotechnical engineering. In 1994, Bill became a facilitator/coach in Human Resources Services at Purdue. He specialized in delivering a variety of FranklinCovey leadership/personal development seminars, and received a “Facilitator of the Year” award from FranklinCovey. Bill was active in community volunteer organizations, and continued to be an avid fly fisherman.

Detailed information on the 19th C. W. Lovell Distinguished Lecture can be found at the following website:
https://engineering.purdue.edu/CE/Academics/Groups/Geotechnical/Details/seminar/Lovell

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Bio: Jonathan P. Stewart's technical expertise is in geotechnical engineering, earthquake engineering, and seismology. He works on problems related to hazard characterization (ground motion, ground failure) and infrastructure response to those hazards (soil-structure systems, distributed infrastructure systems). He has held leadership positions at UCLA (Department Chair), ASCE (Committee Chair, Journal Editor), EERI (Board of Directors, Journal Editor), and federal and state government panels and committees related to seismic risk. He is an elected member of the US National Academy of Engineering

Beginning in 2003, the C. W. Lovell Distinguished Lecture series was established through the generosity of Professor Bill and Mary Ellen Lovell, who expressed an interest in creating a lecture series at Purdue that will have staying power - one in which a track record of scholarship is clearly established. Thus, each year, lecturers with outstanding accomplishments in geotechnic al engineering research are invited to Purdue University. The lecture series creates an excellent opportunity for our graduate students to meet and interact with some of the most important names in geotechnical engineering in person at Purdue.