

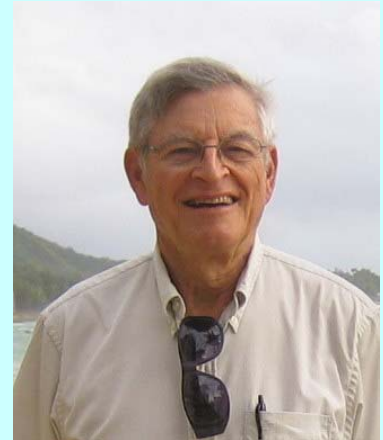


The Donald M. Burmister Lecture
Department of Civil Engineering and Engineering Mechanics
Columbia University

LESSONS FROM THE LIVES OF TWO DAMS

Professor James K. Mitchell
University Distinguished Professor Emeritus
Virginia Tech

April 12, 2016 (2:00-3:00 PM)
Davis Auditorium, CEPSR



Synopsis: Many embankment dams constructed during the first six decades of the 20th century have been found deficient relative their ability to resist currently anticipated levels of seismic shaking and probable maximum flood. Two case histories are described. One is a hydraulic fill structure completed in 1920 that is founded on alluvial material, some zones of which are susceptible to liquefaction. The other is a zoned earthfill dam completed in 1956 that is founded over a channel filled with loose, uncompacted, hydraulically placed tailings from gold mining operations. Each dam has been upgraded in phases over periods of several decades using different strategies and ground improvement technologies to improve stability and reduce failure risks. Several take away lessons from these experiences concerning current risk mitigation strategies, the importance of correct soil and site characterization, and the implementation and effectiveness of different ground stabilization and improvement methods are presented.

About The Speaker: Professor James K. Mitchell received his B.S. in Civil Engineering from Rensselaer Polytechnic Institute (RPI) in 1951 and the S.M. and Sc.D. degrees from the Massachusetts Institute of Technology in 1953 and 1956. From 1958 to 1994 he was on the CEE faculty at the University of California, Berkeley and served as Department Chair from 1979-1984. His teaching, research and consulting activities focused on soil behavior, soil stabilization, ground improvement, environmental geotechnics, and mitigation of seismic risk. He joined the faculty at Virginia Tech in 1994 and now is University Distinguished Professor Emeritus and Consulting Geotechnical Engineer. He was the 2006 recipient of the ASCE Outstanding Projects and Leaders Award (OPAL) in Education. He is an elected member of the United States National Academy of Engineering and the National Academy of Sciences.



The late Prof. Donald M. Burmister (1895-1981) is one of the pioneers in the field of Soil Mechanics and Geotechnical Engineering. He established the Soils Laboratory at Columbia University in 1933. He was a faculty member for 34 years before retiring in 1963. During his tenure at Columbia University, he investigated earthworks and foundations for over 400 projects. Most notably among these were the Brookhaven National Laboratory, the Throgs Neck, Tappan Zee and Verrazano Narrows Bridges, the First New York World Fairs at Flushing Meadows, and the reconstruction of the White House in 1950. He has developed several soil testing methods and his soil classification system is still widely used. He also contributed to the first use of digital computer in conjunction with his theory of the layered pavement system.