



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

Evaluation of Rock Foundation Sockets
&
Some Observations on Professor Burmister

Professor Fred H. Kulhawy
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750 CEPSR



Professor Burmister was one of the early "giants" in the field of geotechnical engineering. This lecture in his honor will begin with some observations about him and a few comments on some of his key contributions. His long-term impact on his chosen field will be noted.

Then the lecture will shift to a broad overview on evaluating rock sockets. Drilled foundations often are socketed into rock to increase the foundation capacity and minimize displacement. However, procedures to quantify the side resistance capacity of sockets vary considerably. This lecture will review the historical development of this technology, discuss many of the proposed methods to predict this capacity, and critically assess them. One method then is recommended, based on the currently available data. Statistics for this method are presented, and design implications are noted. Some construction and field acceptance criteria will be discussed. Observations will also be made on how these methods have been adopted, correctly and incorrectly, in design codes such as AASHTO.

About The Speaker: Dr. Fred H. Kulhawy is Professor Emeritus of Civil/Geotechnical Engineering at Cornell University, and a Consulting Geotechnical Engineer, in Ithaca, New York. He received his BSCE and MSCE from the New Jersey Institute of Technology and his PhD from the University of California at Berkeley. He is licensed in several states as a Professional Engineer, Civil Engineer, or Geotechnical Engineer and was certified as a Diplomate, Geotechnical Engineering in the founding group. His teaching and research has focused on foundations, soil-structure interaction, dams, soil and rock behavior, and geotechnical computer and reliability applications, and he is the author of over 380 published technical papers and reports. He has given more than 1480 lectures around the world and has received 21 professional awards for his work from ASCE, ADSC, IEEE, and others, including election to Distinguished Member of ASCE, the ASCE Karl Terzaghi Award and Norman Medal, and the CGS Meyerhof Award. He also has extensive experience in geotechnical engineering practice with several consulting firms, and he has been a private consultant for major projects on six continents, with over 450 assignments completed to date. In recognition of his many professional contributions, an ASCE Geo-Institute Geotechnical Special Publication (GSP 229) was prepared in his honor. This GSP is titled "Foundation Engineering in the Face of Uncertainty: Honoring Fred H. Kulhawy" and was introduced through a special symposium at the G-I annual meeting in March 2013.



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.