CEE691 Seminars in Civil and Environmental Engineering

“The Evolution of Deep Foundations in Hawaii”

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Location: Bilger Hall 335, Date: Wednesday, April 13, 2016, Time: 1:30 – 2:20 pm

Speaker: Robin Lim is the President of Geolabs, Inc., the largest geotechnical engineering firm in the State of Hawaii. He attained his B.S. degree in Mining Engineering from the University of California at Berkeley and continued with his studies by obtaining an M.S. degree in Geotechnical Engineering also from U.C. Berkeley. Mr. Lim is a licensed Civil Engineer in California and Hawaii and has worked on projects in Hawaii, California, and the Pacific Basin, including Guam, Palau, Saipan, Japan, Korea, China, and Indonesia, among others. He has over 27 years of professional engineering experience working on numerous types of geotechnical engineering projects especially projects involving deep foundations.

Abstract

Mr. Lim will be speaking on the evolution of deep foundations in Hawaii. Deep foundations have been used extensively to support numerous structures in Hawaii especially in the soft and compressible soils of Pearl Harbor and the urban areas of Honolulu since the turn of the 20th century (1900s through the present). Some of the projects that need deep foundation support include waterfront structures, such as piers and mooring dolphins, and also bridges for transportation infrastructure. In the early 1900s, the use of timber piles was more prevalent, but their use was limited by its length (timber piles are limited to typically 60-foot maximum lengths although greater lengths are available via special order). In the last 50 years of so, various hotel and commercial developments in Waikiki and Downtown Honolulu have contributed significantly to our understanding and use of deep foundations, especially driven concrete pile foundations. In the last 25 years or so, we have graduated to drilled shaft foundations to support heavier structural loads for bridges and high-rise buildings. Again, the trends are changing due to the availability of bigger and more powerful machines to install these deep foundation elements. In the last 10 to 15 years, we have used more augered cast-in-place (ACIP) piles to support the new buildings in Hawaii. Mr. Lim will discuss these various foundation types and their use in Hawaii.