

### Seminar Announcement

**Date & Time:**

August 28, 2012, 3:00-4:30

**Location:**

Room 1047, Engineering Research Facility Building, 842 West Taylor Street, Chicago, IL 60607

**Title:**

**Environmental Improvements on Pile Installation in Hong Kong and Macau**

**Speaker:**

Albert T. Yeung, Department of Civil Engineering, University of Hong Kong, Pokfulam, Hong Kong

**Synopsis:**

Most infrastructures and high-rise buildings are supported by deep foundations founded in competent geologic strata. Piles are the most common type of deep foundations in practice in Hong Kong and Macau. Piles can be cast in-situ, such as large-diameter bored piles, or pre-fabricated, such as steel H-piles or precast prestressed concrete piles. Pre-fabricated piles are usually installed by percussion. Due to the growing environmental awareness of the public, problems of air pollution, noise and vibration induced by the percussion piling process are becoming unacceptable to the public. The problem is further aggravated by the extremely populous and congested living environments of Hong Kong and Macau. The banning of the use of diesel hammers in Hong Kong has eased the air pollution problem. However, problems of noise and vibration remain. The techniques of jacking pile and preboring precast prestressed piles will be presented in this seminar. These techniques of pile installation are more environmentally friendly in many aspects.

For pile jacking, piles are jacked into the ground hydraulically to eliminate any air pollution, noise and vibration problems. The pile can be steel H-pile or precast prestressed concrete pile. Every pile is load-tested during the installation process and the reliability of the piles installed is thus greatly improved. Installation of precast prestressed concrete piles by preboring was initially developed in Japan. The soil in the vicinity of the pile is liquefied and improved by the introduction of cement-bentonite slurry through augering by specially designed equipment prior to installation of the precast prestressed concrete pile. The method of installation does not only eliminate the problems of air pollution, noise and vibration. It also eliminates the uncertainty of pile damage by percussion which is a common problem of driving of concrete piles. The method of pile installation was introduced to Macau recently and the first trial pile program was successfully performed in March 2012.

These environmentally friendly pile installation techniques will be presented in the seminar. Moreover, the construction problems and solutions associated with the installation techniques will be discussed.

**Speaker Bio:**



Ir Dr. Albert T. Yeung is on the civil engineering faculty of The University of Hong Kong (HKU). He is a Fellow of the American Society of Civil Engineers (FASCE), a Fellow of the Institution of Civil Engineers of U.K. (FICE), and a Fellow of the Hong Kong Institution of Engineers (FHKIE). He received his BSc(Eng) in civil engineering from HKU with first class honors, MS and PhD from the University of California, Berkeley under the supervision of Professor James K. Mitchell. He is a Registered Professional Engineer of Hong Kong in civil, environmental, and geotechnical disciplines (RPE), a Chartered Engineer of U.K. (CEng), and a Registered Professional Engineer of Texas (PE).

Before his return to Hong Kong in 1998, he was on the civil engineering faculty of Northeastern University in Boston and Texas A&M University in College Station for a total of more than 7 years. He was also a Research Assistant Engineer of Texas Transportation Institute for 8 years. After his return to Hong Kong, he served as Chief Engineer of Binnie Black & Veatch Hong Kong Limited (a subsidiary of Black & Veatch of Overland Park, Kansas), and Assistant Secretary for Financial Services and the Treasury of the Hong Kong Special Administrative Region (HKSAR) Government before his return to academia in 2003.

He has more than a hundred and eighty publications to his credit. His notable awards include the IPA Research Grant Award of the International Press-in Association 2008, the 1st Prize of Civil Engineering Papers of the Year Award 2008 of the Hong Kong Institution of Engineers (HKIE), the Peter H.K. Chan Award 2001 for the Best Environmental Paper of HKIE, the Samuel Arnold Greeley Award 1999 of ASCE, the Arthur Casagrande

Professional Development Award 1996 of ASCE, the Dow Outstanding New Faculty Award 1994 of the American Society for Engineering Education, the Texas Engineering Experiment Station Select Young Faculty Award 1993, the Kumagai Prize 1994 of HKIE, among many others.

He delivered the Invited Lecture at the 1st International Meeting on "The role of the civil engineer in shaping the future: Challenges and opportunities" jointly organized by the Technical Chamber of Greece (TEE), the Association of Civil Engineers of Greece (SPME), and the ASCE Hellenic Section in Athens, Greece in 2012; the Invited Lecture at the 9th Symposium on Electrokinetic Remediation in Kaohsiung, Taiwan in 2010; the Invited Lecture at the International Symposium on Environmental Geotechnology in Hangzhou, Zhejiang, China in 2009; the Feature Lecture at the 9th International Symposium on Environmental Geotechnology and Global Sustainable Development in Hong Kong in 2008; the Invited Lecture at the 2007 Landslide Symposium: New tools and techniques for developing regional hazard maps and future risk management practices of the Oregon Department of Geology and Mineral Industries in Portland, Oregon; the Keynote Lecture at the 2005 Geotechnical Engineering Joint Conference of the Korean Geotechnical Society and Korea Association of Professional Engineers in Geotechnical Engineering in Seoul, Korea; the Keynote Lecture of the 1999 International Symposium on Solid Waste Management Technology in Beijing, China; among many others.

He is the current Region 10 Director of ASCE, and the Chair of the Board of Governors of ASCE Region 10 (International Region). He is serving on the Editorial Board of *Geomechanics and Geoengineering: An International Journal*. He is the official representative of ASCE to the Asian Civil Engineering Coordinating Council (ACECC). He is a member of the Executive Committee, Chair of the Membership Subcommittee, and a member of the Awards Subcommittee of ACECC. He is now serving as the Senior Vice President of the Community & Construction Professionals' Development Centre in Hong Kong. He is an External Examiner of The Open University of Hong Kong, Chu Hai College of Higher Education, and the Hong Kong Institute of Vocational Education, Tsing Yi. On community service, he is serving the Review Panel under Land (Miscellaneous Provisions) Ordinance of the Highways Department of the HKSAR Government; and the Geotechnical Engineers Registration Committee Panel, the Geotechnical Engineers Registration Committee, and the Technical Committee for the Code of Practice for Site Supervision of the Buildings Department of the HKSAR Government.

He has been serving as engineering consultant to Zhong Jiang International (Macau) Engineering Co. Ltd.; Minter Ellison Lawyers; Baker & McKenzie, Solicitors; H.L. Wong & Co., Solicitors; K.H. Foundations Limited; Highways Department, Drainage Services Department, Environmental Protection Department, Civil Engineering and Development Department, and Water Supplies Department of the HKSAR Government; Hutchison Whampoa Property; Sino Rich Engineering Limited; Lam Woo – Preussag Joint Venture; AECOM; Maunsell Geotechnical Services Limited; Freyssinet Hong Kong Limited; Intrafor Hong Kong Limited; Stevenson, Wong & Co.; Sam Woo Bore Pile Foundation Limited; Times Geotechnical Engineering Ltd.; Shui Wing Engineering Co. Ltd.; Hip Hing Construction Co. Ltd.; Chung & Ng Consulting Engineers Ltd.; JB Engineering Company; Bachy Soletanche Group; and many others.

In the past, he has served on the Editorial Board of the *Journal of Geotechnical and Geoenvironmental Engineering* and the *Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management* of ASCE. He has also served on various technical committees of ASCE, HKIE, and the Transportation Research Board. He has been a member of the Court, the Council, and the Senate of The University of Hong Kong. He has also served as a member of the Board of Governors of the English Schools Foundation of Hong Kong, among many others.

**Directions and Parking:**

Please see: <http://www.uic.edu/labs/geotech/contact.html>