

International Symposium on Advances in Ground Technology and Geo-Information (IS-AGTG)

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Keynote Lecture

Innovative approaches to land reclamation in Singapore

ABSTRACT

Land scarce Singapore faces the twin challenge of disposal of unwanted soils from dredging and underground construction activities on the one hand and the need for fill materials for land reclamation activities on the other hand. This paper summarizes the efforts made to solve both problems, turning unwanted soil of negative value into fills with economical values. Solutions that were explored include some early works on the use of slurry as fills, more recent works exploring the use of clay lumps that were directly dumped and treated and to the ongoing works exploring the use of cement-mixed soils. A common challenge in land reclamation is the very large volume to be handled, often in the order of tens to hundreds of millions of cubic metres – so called “gigatech” problems. This often plays a key role in deciding the suitability of the construction method chosen.

THE SPEAKER



Professor Tan Thiam Soon is Vice Provost (Education) at the National University of Singapore. He assists the Provost in setting educational directions and policies for the University, in ensuring high academic standards, and in education quality assurance. He has oversight of the Registrar's Office, Office of Admissions, Centre for Development of Teaching and Learning and the Centre for Instructional Technology.

Prof Tan is a faculty member with the Department of Civil and Environmental Engineering and was Dean of Admissions from 2005 to 2007. Graduating from the University of Canterbury (New Zealand) in 1979 under a Colombo Plan Scholarship, Prof Tan subsequently obtained his MS and PhD from the California Institute of Technology working under the late Prof Ronald F. Scott. He joined the then Department of Civil Engineering in 1986. His main areas of research interest are land reclamation, deep excavation, soil improvement, and soil characterisation. He has given invited and keynote lectures at a number of international conferences and received the ASTM's C A Hogentogler Award for 2007 and the Best Research Paper Award 2008 from the Japanese Geotechnical Society. He was awarded with the Public Administration Medal (Silver) by the President of Singapore in 2008 for his service to the university's administration.

Prof Tan is a registered Professional Engineer (Geotechnical) in Singapore and has been involved in numerous consulting jobs in Singapore concerning deep excavation, land reclamation and other geotechnical problems. He is a director of the Singapore Examinations and Assessment Board and a Director of NUS High School of Math & Science.