



GEOTECHNICAL SEMINAR

JOINTLY ORGANIZED BETWEEN
GEOTECHNICAL SOCIETY OF SINGAPORE (GeoSS)
& CENTRE FOR SOFT GROUND ENGINEERING



Large Man-made Airport Islands in Japan: History of Reclamation Technology and Recent Interpretation of Long-term Consolidation

by

Dr. Yoichi Watabe

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Date: Tuesday, 7 October 2008
Time: 6:30pm Reception
7:00pm Seminar
Venue: **E1A-3-11**
Faculty of Engineering
National University of Singapore

SYNOPSIS

The lecture will introduce the history of some typical large man-made airport islands in Japan including the followings: **(1)** Tokyo International Airport: The offshore expansion project, in which the airport was constructed on an ultra-soft clay deposit, was carried out from 1984 to 2004. The further expansion project with the fourth runway is under construction. The new runway will be a hybrid island of landfill and bridge. In the reclamation part, a large amount of cement treated clay and air-foam treated lightweight clay will be used. **(2)** Central Japan International Airport: The airport was inaugurated in 2005. Some part of the island was reclaimed by cement treated clay. **(3)** Kansai International Airport: The second phase with a parallel runway is operational since August 2007. The reclamation technology is quite normal, but the estimated settlement is over 18 m.

The lecture will discuss these reclamation technologies which overcame various severe conditions such as thick soft clay deposit, large water depth, material shortage, short construction period, etc. Dr. Watabe has been studied long-term consolidation of Osaka Bay clay retrieved from the construction site of the Kansai International Airport. The lecture will then discuss recent knowledge on the strain rate effect for the long-term consolidation behavior obtained in the laboratory test, in association with the isotache concept.

THE SPEAKERS

Dr. Watabe graduated from Tokyo Institute of Technology in 1990 and he obtained Doctor of Engineering from Tokyo Institute of Technology in 1995. Since then, he is working at Port and Airport Research Institute (formerly Port and Harbour Research Institute), Japan. He is currently the Leader of Geotechnical and Geo-environment Research Group. He has been invited many technical committees for Port and Airport construction projects under the Japanese ministry. From 1997 to 1999, he was also a Post-Doctoral Fellow in Laval University, Quebec, Canada. His main research topics have been consistently on soft clay engineering. He started his research with centrifuge modeling when he was a student of Tokyo Institute of Technology; however, he has been using "conventional" equipments as an engineer, such as triaxial apparatus and oedometer, after joining to Port and Airport Research Institute. His research outcome on determination method for soil parameters has become a part of Japanese design code for port facilities corresponding to the performance based design.

For catering purpose, please confirm your attendance by reply e-mail to: geoss@nus.edu.sg

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