

# One-Day Workshop on Soil Parameters – Interpretation for Design



by Engr. Richard Ong Hwa Tiam

GEOTECHNICAL ENGINEERING TECHNICAL DIVISION

**THE** One-Day Workshop on Soil Parameters – Interpretation for Design was organised with the aim to provide engineers with practical knowledge to interpret geotechnical site investigation reports and make assessments on the data for the use in geotechnical engineering designs. The workshop was conducted at Tan Sri Prof. Chin Fung Kee Auditorium, Wisma IEM with an attendance of 66 participants.

The speaker, Mike Dobie, kick-started the workshop by illustrating soil behaviour using the phenomenon which can be observed as one steps on a beach, and a demonstration with two bottles filled with dry and wet sand, respectively. He managed to get the participants' attention, making the participants eager to know more about a number of important geotechnical concepts such as drained and undrained behaviour, soil shear strength and dilation, permeability and flow in soils.

This was followed by a discussion on soil index properties with the emphasis on meticulous review of the site investigation report data, in order to check on the consistency and reliability of the soils being tested. Dobie commented that index property values are generally plentiful in geotechnical site investigation reports, so they are vital as a means of checking both consistency of the data and the results of other tests, such as soil shear strength.

The second session of the workshop was on soil shear strength where Mike refreshed the participants' knowledge on principle of effective stress and the appropriate shear strength to be used in design (i.e. drained or undrained shear strength). He also discussed about the procedure for measuring shear strength of soil using shear box test and triaxial test with highlights on the consequences from procedural error in testing.

In the third session on soil consolidation properties, Dobie discussed about the procedures of measuring soil compressibility using oedometer test while guiding the participant through practical examples on the determination of consolidation properties. The final session of the workshop focused on the application of some of the soil parameters and concepts discussed to specific design situations, including ground improvement by consolidation and the arguments for drained versus undrained analysis.

Throughout the workshop, real examples of soil data and parameters were used to illustrate the various concepts and points made. In some cases, these examples had been arranged as workshop examples for the participants to review and comment on. In other cases, some simple calculations were required. These examples had served to encourage critical assessment of geotechnical data, before making a decision as to how the data may be used in a design.

Indeed, the workshop's approach in dissecting the topic on interpretation of soil parameters for design had facilitated exchange of ideas during the question and answer session. All in all, the workshop had achieved its objective of imparting practical and useful information to the practising engineers. ■