

Application of Modern Soil Mechanics to Some Aspects of Design and Construction at Terminal 5, Heathrow Airport, London.

D.W. HIGHT, Geotechnical Consulting Group, London, UK

ABSTRACT

A new passenger terminal, Terminal 5, is under construction at London's Heathrow Airport. The Client, British Airport Authority, encouraged innovative design and construction methods, including the use of pre-construction trials. The lecture will describe the application of such methods to geotechnical aspects of the project. The following topics will be dealt with:

- Ground investigation in London Clay, including the use of rotary coring, geophysics, sample quality evaluation, and high quality laboratory testing
- The prediction of stand-up time of temporary slopes in the London Clay using finite element analyses which modelled progressive failure, and the monitoring of these slopes using suction measurements
- The re-use of London Clay as backfill to structures and the requirements for its conditioning, determined on the basis of field trials
- The behaviour of piles in swelling ground elucidated by an extensive programme of tests on piles with soft toes, loaded at different times after installation

Cost savings resulting from the trials and innovations will be discussed.