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EAST MIDLANDS GEOTECHNICAL GROUP

PRESENTS

RAPID LOAD TESTING OF PILES IN CLAYS

WITH

Dr Adrian Hyde

(Department of Civil and Structural Engineering, University of Sheffield)

The Statnamic test is a relatively new method of testing piles, which through its simplicity, ease of use and efficiency, offers the potential for foundation engineers to improve the quality control and testing of foundations, thus moving construction a step closer to becoming a production process. The Statnamic test involves the measurement of the load-displacement behaviour of a pile during the application of a controlled load. While good correlations have been obtained for free draining soils further research was required in a wider variety of soil types and geological conditions. A particular concern was the effect of varying rates of loading on the shear resistance of clays, and in 1999 an EPSRC research project was undertaken to investigate this aspect further.

An instrumented model pile was tested in laboratory conditions, to assess inertial and radiation damping effects. Soil models based on the laboratory element, model pile, and full scale prototype pile tests were developed to improve the prediction of the static load deflection behaviour from Statnamic test data for a clay soil. Full-scale static and rapid load tests were then performed in a glacial clay, and a partially successful Class A prediction was made of the "static" load deflection curve, which was later refined and improved to give a closed-form Class C method for predicting the "static" load displacement curve from rapid load pile tests in clays.

Dr Adrian Hyde *is a Chartered Civil Engineer and was awarded his PhD by the University of Nottingham in 1974. In 1976 he was awarded the BGS Prize for a paper on Creep and Repeated Loading of Soils. In 1974 he was appointed as a lecturer in Geotechnics at the University of Loughborough and in 1985 as a Senior Lecturer at the University of Bradford. Since 1997 he has worked at the University of Sheffield where he is the Reader in Geotechnics. Since 1988 he has been developing research programmes jointly with three Japanese Universities on the fundamental behaviour of crushable soils, pile bearing capacity in crushable soils, liquefaction of crushable decomposed granite fills for seismic risk assessments, and the cyclic loading of clays and silts related to seismic liquefaction and post-earthquake settlements. Since arriving at Sheffield in 1997 he has developed new research in the rapid load testing of piled foundations and geotechnics applied to archaeological resources. He is fluent in Italian and Japanese and has been appointed as a Visiting Professor at Yamaguchi University in Japan and Trento University in Italy.*

Monday 4th October, 2004

6.30pm

at

University of Nottingham

School of Civil Engineering, Coates Building

Refreshments available in Telford Orangery, Coates Building, from 6pm

(A joint meeting with the Institution of Structural Engineers)

Further details from: www.lboro.ac.uk/emgg or Dr A El-Hamalawi: 01509 223206 / a.el-hamalawi@lboro.ac.uk