Stiff Sedimentary Clays—Genesis and Engineering Behaviour

Editorial

Welcome to the *Géotechnique* Symposium in Print for 2007. *Géotechnique* symposia in print have become established in a biennial cycle as major landmarks on the geotechnical landscape. Previous symposia have addressed geotechnical engineering processes, laboratory and field testing, and design processes and theory. The subjects have included various geotechnical materials including partially saturated soils, weak rocks and the 1992 symposium on the Bothkennar soft clay test site. This symposium, the 14th in the series, returns to geo-materials with the focus on stiff sedimentary clays.

Why this subject for the 2007 Symposium? I suggest two major reasons. First, advanced geotechnical engineering in stiff clays is of increasing importance as we shape the infrastructure of the 21st century. Many of our major cities are built on stiff sedimentary clays and the increasing demands for large earthworks, major foundations, deep excavations and tunnels, often in close proximity with each other, stretches our scientific understanding and engineering skills to their limits. Away from urban centres transportation, industrial and power sector schemes increase the range of loading types and performance requirements that must be mastered. Such developments include work from across Europe on very deep tunnels in stiff clays for research into nuclear waste repositories. Second, both in the UK and across Europe, academic studies have recently provided important new insights into the characterisation and behaviour of stiff clays. These studies have brought together geological and engineering approaches. They have included major experimental programmes using new techniques such as the hollow cylinder test and greatly improved small strain instrumentation. And alongside such work there have been significant developments in the analytical modelling of stiff clay behaviour. In summary, we are studying stiff clays in greater depth than ever before both because we can and because we need to.

The papers are the heart of the symposium and are published in this edition of the journal and the next. This edition features the papers which focus on various aspects of the London Clay formation. The March edition will contain papers dealing with a range of other stiff clay formations and more general experimental and theoretical studies.

The papers submitted to the symposium cover several major themes. A number of papers emphasise the importance of understanding geological processes and stratigraphy for engineering in stiff clays. New insights

from laboratory and field techniques are presented and discussed. The engineering characterisations of various stiff clay formations provide exemplars of state of the art studies. Many of the papers deal with a wide range of construction in stiff clay formations including novel approaches and insights.

The symposium meeting will be held on 14th May at the Institution of Civil Engineers and will be a full day event. We plan to have eminent keynote addresses to provide the context for the papers. The papers themselves will be summarised by session chairpersons with a substantial time available for discussion. In particular many of the authors will be present enabling a valuable depth of discussion. Our plans include the recording and publication of the discussions. We are also planning for the display of posters to catalyse informal discussions in the tea/coffee breaks and at lunch.

My role has been as Chairman of the *Géotechnique* Advisory Panel Sub-Committee and as Guest Editor of this and the next issue of *Géotechnique* which contain the Symposium in Print papers. All the papers in these issues have been reviewed to the exacting standard required for all papers published in *Géotechnique*. The work of assessing the papers and formulating the symposium arrangements has been carried out diligently by the members of the sub-committee. I must extend my thanks both to the sub-committee and the *Géotechnique* secretariat (Mary Henderson, Kathleen Hollow and Ben Ramster) for their hard work, dedication and enthusiasm. Thanks are also due to Thomas Telford who are generously underwriting the symposium meeting and to the Publisher Leon Heward-Mills for his continued support and encouragement.

The subcommittee and I strongly encourage you to read the papers before attending the symposium meeting. We are confident that you will find the papers to be of great interest. Indeed we believe that many of these papers will become standard reference works on the topic of stiff clays. We are confident that the papers will also provoke questions and stimulate new ideas. The symposium meeting will be the ideal forum to debate and advance these issues. As with so many endeavours, you will get out what you put in. So please engage with the papers and come to the symposium meeting ready to make your unique contribution.

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