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Editorial
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Editorial

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Welcome to the June issue of *Geotechnical Engineering* (GE). In this issue we have eight full papers covering diverse geotechnical engineering structures including soil-nailed slopes, piles, retaining walls and diaphragm walls, and laboratory tests, full-scale tests and design methods. So hopefully something to suit everyone's interests.

The first paper, by Davis and Drake (2014), describes a full-scale pre-construction trial of soil-nailed slopes for the A3 Hindhead road scheme in the south of England, for which more than 8000 soil nails were needed for temporary and permanent works. The trial was designed to address as many design and construction risks as possible and was undertaken in an area excavated for a deep cutting, therefore all the nails were sacrificial and could be tested to failure and exhumed. Different construction methods were assessed, in particular, procedures for grouting to ensure sufficient cover to protect the nails from corrosion.

Continuing from a recent run of very interesting papers on pile load tests (Gavin *et al.*, 2013a, 2013b; Paik *et al.*, 2013; Rimoy *et al.*, 2013; Tolooiyan and Gavin, 2013), the next paper, by Bica *et al.* (2014), concerns full-scale testing of a driven H pile and a driven closed-ended pipe pile in transitional soils – that is, 'non-textbook' soils composed of various amounts of clay, silt and sand. Of particular note is the detailed description of the planning of the load tests, the instrumentation of the piles, the testing methods and the interpretation of the data, which I am sure will be of use to those who need to plan pile tests in the future. The third paper is by Fang *et al.* (2014), also on piling. They have investigated the effect of pressure grouting through the toe of bored piles and its effect on shaft friction and end-bearing. A particularly interesting aspect to designers is the reduction in axial displacement required to mobilise end-bearing.

The fourth paper is a review of methods for modelling drystone retaining walls, by Le *et al.* (2014). It summarises and compares three methods used to evaluate the stability of drystone retaining walls: the distinct element method, limit equilibrium analysis and yield design analysis. Design charts are presented to aid assessment. In France and in the UK, where transport infrastructure depends on a large number of drystone retaining walls, this research has economic and environmental significance. This paper builds on the work of Mundell *et al.* (2009), which was presented in the biennial ICE Geotechnical Engineering Lecture in 2010.

The fifth paper is by Tu and Jia (2014) and presents an analytical solution for a rigid retaining wall undergoing horizontal translation under the action of a c-φ soil backfill, taking into account the arching effects that occur in the backfill. A new expression for the active earth pressure coefficient is derived.

The sixth paper, by Khayat *et al.* (2014), considers the effect of grain shape on the anisotropic behaviour of silt–sand mixtures. The authors present the results of 90 hollow cylinder torsion shear tests conducted on three types of sand with different angularity but similar particle size distributions, mixed with different amounts of silt. Angularity was quantified by roundness and sphericity. The authors find that grain shape of the sand affects void ratio and hence strength. As silt content is increased, relative density increases but the strength decreases, indicating that relative density is not a reliable indicator of strength in soils with varying silt content.

The seventh and penultimate paper in this issue is on diaphragm wall displacement due to creep of soft clay (Chen *et al.*, 2014). The paper describes the calibration of a soft soil creep model to field data from a basement construction in Taipei. Parametric studies based on this model are then performed in a two-dimensional finite-element program. Finally, the results are compared to creep rates from diaphragm wall excavation case histories. This paper should provide a useful reference for future design of diaphragm walls in soft clays.

The final paper in this issue is by O'Kelly (2014) and is on the characterisation and undrained strength of amorphous clay. Amorphous organic clays may be produced as residues from potable water treatment or industrial processes and are aggregate flocs of organic and clay mineral particles. Being predominantly colloidal in size and in a saturated, remoulded condition means that their behaviour is conveniently described by critical state soil mechanics. Traditional Atterberg limits appeared to be poor descriptors for this material, with remoulding being possible below the plastic limit and relatively high shear strengths being measured at high water contents. This was attributed to the distribution of water within the material, with water located around the flocs governing behaviour, while water within the flocs increased the total water content measured by oven drying.

GE is known for publishing excellent case studies, and many of these case study papers are award-winning. The previous (April) issue this year was a themed issue on deep basements and retaining walls, and contained many excellent case studies. We hope that this and the upcoming themed issue in 2015 on construction processes and installation effects will result in more high-quality, award-winning case study papers, because these

papers are invaluable to geotechnical engineering practitioners and researchers. They are used for making empirical predictions, and for validation of numerical or analytical models. The lessons learnt are invaluable for the improvement of geotechnical predictions.

If any of the papers in this issue are of particular interest or raise issues that you have a strong feeling about, then you could consider contributing to the journal in the form of a discussion piece. If you wish to make a more active contribution there are also regular opportunities for new panel members. For instance, we are currently looking for members to begin duties in 2015. We are particularly interested in receiving short CVs (four pages maximum) from those in the UK, northern Europe, the USA and China. To maintain a balanced panel membership of practitioners and academics we are looking for new members predominantly from the UK academic and industry sectors (senior level and above), although all CVs submitted will be considered. If you are interested please send a short CV to Alison McAnena (alison.mcanena@icepublishing.com) by 1 August 2014.

The chair of the advisory panel, Dr Michael Brown (University of Dundee), also completes his term at the end of 2014 and thus we would like to identify a successor for this role. If you feel you have the relevant experience and motivation to take on this challenging and rewarding position please forward a CV (by 1 July 2014) highlighting similar roles and any editorial experience to Ben Ramster (ben.ramster@icepublishing.com). If you would like to know more about the panel chair role and required commitment please contact Ben Ramster for an informal discussion.

I hope that you find this issue of GE stimulating and of practical use to you as geotechnical engineers.

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