It is my pleasure to welcome our readers to the October issue of Geotechnical Engineering. Before introducing the papers I would like to highlight some important journal news. The new impact factor for Geotechnical Engineering has recently been calculated and has increased from 0.57 last year to 1.06 this year. This is a significant achievement and is a reflection of the hard work of the Editorial Advisory Board, our reviewers and our authors in their drive to maintain high quality standards for accepted papers within the journals remit. As ever, as the end of a year approaches, some of our Editorial Advisory Board members will move on from their roles and this provides the opportunity for new members to join the board. We are always looking for enthusiastic, technically skilled and high calibre professionals to join the board. Consulting, contracting or academic experience is welcomed as the journal seeks to keep a balance of experience across the Board. We would particularly welcome interest from the UK and northern Europe. If you would like to contribute to the journal in this way then please contact Dr Alison McAnena at alison.mcanena@icepublishing, enclosing a CV of now more than four pages in length.

One of the highlights of the journal year is the publication of our themed issue. This year, the topic tackled was *"deep basements and retaining walls*" and work is well underway for next year's themed issue on "*construction process and installation effects*". However, it is already time to start thinking about our themed issue for 2016 which will be on the topic of "*Innovation in deep foundation design and construction*". A detailed call for papers for this theme is to be found on the inside cover; if you have a contribution to make in this area please note the abstract deadline of 1st October 2014.

The first two contributions to this issue of Geotechnical Engineering deal with the complicated and challenging geomaterial of peat. In a briefing note O'Kelly & Orr (2014) provide a salutatory lesson in the difficulties of trying to characterise the shear strength of peat. Based on reviewing published triaxial tests, most of which record very high friction angles, they conclude that the traditional c'=0 Mohr Coulomb approach is not appropriate for peat and that these high ϕ' values are unrealistic and unconservative. They then go on to postulate that perhaps an apparent cohesion approach would be more suitable. This work follows on from work highlighting the difficulties of triaxial testing for peat by Zhang & O'Kelly (2014), recently published in our February issue. The complexities of dealing with peat in engineering projects is also underlined in the first paper by Boylan & Long (2014). They highlight the problems of in situ testing for peat strength, and with reference to applications in peat slides, have carried out 111 simple shear tests on peat in an attempt to determine more realistic undrained strength parameters for use in stability assessments. Their results show the potential for stress history dependency in determining s_u, but suggest a lower bound relationship for s_u/σ_v' that can be applied conservatively in the first instance.

The subsequent three papers in the journal are all on the theme of piled foundations. First Galbraith et al (2014) take a look at the issue of extrapolating pile test data to "failure" when insufficient displacement has been recorded for the pile to have been judged to have failed. The authors used a database of pile load tests in Ireland to test the Chin method which assumes a theoretical hyperbolic load deflection curve. They found that this extrapolation was reasonable providing the pile test had resulted in displacement of at least 5% of the pile diameter. The authors also looked at within site variability by grouping the pile tests into similar pile types and conditions. This showed variability of 15 to 40% depending on the number of piles in a group and their size.

Stainer et al (2014) consider the specific problem of the design of screw piles (or screw anchors). Recent research (Knappett et al, 2014, Rao et al 1991) had led to the suggestion of different failure mechanisms for these piles depending on the screw plate spacing. However, the model testing presented by the authors in this issue shows a classical cylindrical failure surface regardless of plate spacing. The paper then goes on to use the model tests to compare different design approaches for the measured capacity of the piles, highlighting greater economy in modern partial factor approaches compared to traditional permissible stress analysis. The work also shows the importance of a low plate spacing ratio in reducing the stiffness of the pile response, suggesting that this approach should be used to limit pile displacements in practice.

A long term view is taken by Tang et al (2014) who present load and settlement data for constructed piled raft foundations in Shanghai. Their analysis shows how the load sharing between the piles and the raft is determined by the pile spacing and the construction stage with some buildings exhibiting close to equal load sharing during construction, yet the majority of the load reverting to the piled foundations in the long term. As pile spacing exceeds five diameters, the contribution of slab to the long term performance increases.

The final two papers in this issue relate to the broad topic of site information, firstly considering in situ testing and secondly instrumentation. Ku & Mayne (2014) take in situ shear wave velocity data from twelve well documented test sites and use this to derive a small strain shear modulus ratio. Using other data on the stress history of the sites they show a strong correlation between this ratio and the stress history measured by over-consolidation difference (the absolute difference between the pre-consolidation pressure and the current in situ stress). Finally, Wan & Standing (2014) look into the details of geotechnical instrumentation installation through a case study on the Crossrail project. Previously the authors have used the same site to assess the accuracy of typical displacement measuring instrumentation for deep excavation applications (Fearnhead et al, 2014). In this paper they consider the often neglected subject of mix properties for borehole grouts when using fully grouted displacement and porewater pressure sensors. The authors present test results for a number of grout mixes and compare these to the in situ soil conditions at the site.

Overall there is a fascinating mix of material within Geotechnical Engineering this month and we hope you find the papers a useful and stimulating read. We welcome comments on the papers published and you will find instructions for contributing discussion to the journal at the end of each paper.

For up to date information on Geotechnical Engineering please visit http://www.icevirtuallibrary.com/content/serial/geng.

References outside of the issue:

Fearnhead, N., Maniscalco, K.; Standing, J. R. & Wan, M. S. P. (2014) Deep excavations: monitoring mechanisms of ground displacement, Proceedings of the Institution of Civil Engineers Geotechnical Engineering, 167 (2), 117-129.

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