

Editorial

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This issue of *Geotechnical Engineering* contains a Briefing article, followed by seven technical articles and a discussion contribution. Geotechnical engineers have often had to operate in a ‘data-poor’ world. This issue contains papers that present and analyse large quantities of geo-data collected from a variety of sources. There is also a strong link to design problems. In their Briefing article, Wilkins *et al.* (2017) highlight that a key set of improvements has now been incorporated into BS 8006-1 ‘Code of practice for strengthened/reinforced soils and other fills’. This is a useful communication for the geotechnical community.

Three detailed case study papers then follow. Bloodworth and Houlsby (2017) present a detailed case study on the ‘pre-vaulting’ tunnelling beneath some masonry buildings in the Ramsgate area. The authors’ report that the monitored buildings exhibited a lower damage category than what would have been predicted using more traditional theories. Kumar *et al.* (2017) present the results of a large piling project from Vietnam and calibrate a finite-element model to study a combined pile-raft foundation system. They conclude (among other things) that the soil–pile–raft interaction factor governs the number of piles required. Larkela *et al.* (2017) describe the results of field testing of a vertical drilled ‘sheet pile wall’ from a site in Finland, and the suitability of the wall as a retaining structure is then examined, with the authors reporting good performance.

Geotechnical databases are highly valuable for designers and modellers as they allow for the variability of key parameters to be estimated as well as generate useful correlations (cf. Kulhawy and Mayne, 1990). Ouyang and Mayne (2017) make use of spherical cavity expansion theory to derive new relationships between piezocone and flat plate dilatometer test data that have been assembled from many sources into a large database. The use of the new relationships is demonstrated with two mini-case studies: Osnøy in Norway and Bothkennar in Scotland. Baroni and Almeida (2017) present a large field database of tests on undisturbed samples from the Jacarepaguá Lowlands in Rio de Janeiro, Brazil, to establish correlations between soil compression index, natural water content, void ratio and liquid limit and then compare these correlations to others found in the literature. The authors’ correlation between compression index and liquid limit is found to exhibit the greatest deviation from similar correlations reported in the literature.

The next two papers are more analytical in nature. Razavi and Bonab (2017) study soil nails in service using a three-dimensional finite-element model to perform a detailed parametric study. Xiao and Guo (2017) derive useful formulae that can be easily implemented in consultancy office spreadsheets to determine anchor forces for deep excavation design work.

The issue concludes with a discussion article with contributions by Cui, Zheng, Zhang and Zhang (Jeffrey *et al.*, 2017). Discussion articles are very useful and here the authors of the original double set of papers, Jeffrey *et al.* (2016) and Knappett *et al.* (2016), are able to clarify some aspects of the original work.

On behalf of the Editorial Panel I hope that you enjoy reading the articles in this issue.

REFERENCES

- Baroni M and Almeida MSS (2017) Compressibility and stress history of very soft organic clays. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170**(2): 148–160, <http://dx.doi.org/10.1680/jgeen.16.00146>.
- Bloodworth AG and Houlsby GT (2017) Analysis of pre-vault tunnelling interaction with buildings. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170**(2): 99–116, <http://dx.doi.org/10.1680/jgeen.15.00176>.
- Jeffrey JR, Brown MJ, Knappett JA *et al.* (2017) Discussion: CHD pile performance: part I – physical modelling. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170**(2): 186–187, <http://dx.doi.org/10.1680/jgeen.16.00216>.
- Jeffrey JR, Brown MJ, Knappett JA, Ball JD and Causis K (2016) CHD pile performance: part I – physical modelling. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **169**(5): 421–435, <http://dx.doi.org/10.1680/jgeen.15.00131>.
- Knappett JA, Causis K, Brown MJ, Jeffrey JR and Ball JD (2016) CHD pile performance: part II – numerical modelling. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **169**(5): 436–454, <http://dx.doi.org/10.1680/jgeen.15.00132>.
- Kulhawy FH and Mayne PW (1990) *Manual on Estimating Soil Properties for Foundation Design*, Rep. No. EL-6800. Electric Power Research Institute, Palo Alto, CA, USA.
- Kumar A, Patil M and Choudhury D (2017) Soil–structure interaction in a combined pile-raft foundation – a case study. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170**(2): 117–128, <http://dx.doi.org/10.1680/jgeen.16.00075>.
- Larkela L, Lehtonen J and Korkkila-Tanttu L (2017) Testing of open section drilled C-pile and CT-pile wall. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170**(2): 129–136, <http://dx.doi.org/10.1680/jgeen.15.00029>.

Ouyang Z and Mayne PW (2017) Effective friction angle of soft to firm clays from flat dilatometer. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170(2)**: 137–147, <http://dx.doi.org/10.1680/jgeen.16.00073>.

Razavi SK and Bonab MH (2017) Study of soil nailed wall under service loading condition. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170(2)**: 161–174, <http://dx.doi.org/10.1680/jgeen.16.00006>.

Wilkins T, Worrall K and Smith R (2017) Briefing: BS 8006-1: a major amendment for 2016. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170(2)**: 97–98, <http://dx.doi.org/10.1680/jgeen.16.00217>.

Xiao S and Guo WD (2017) Limit analysis of ground anchor forces. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **170(2)**: 175–185, <http://dx.doi.org/10.1680/jgeen.16.00056>.