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Editorial
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Editorial

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Welcome to the June issue of *Geotechnical Engineering*, which is the first part of the themed issue on construction processes and installation effects. This theme was so popular that papers have been spread over two issues of the journal, the next following in August. In this issue we have eight full papers covering diverse geotechnical processes including tunnelling, jacked piles, vertical drain installation, depressurisation, voids grouting and soil mixing. So hopefully something to suit everyone's interests.

The first paper (Farrell and Terry, 2015) describes the installation of a pipe canopy above and parallel to a new sprayed concrete tunnel. This pipe canopy was intended to reduce settlement of an existing escalator barrel above. Deflections of the pipe and movements of the escalator were measured and compared to predictions. The paper gives practical guidance on installation jacking forces, as well as the position and length of pipe canopies to minimise settlement.

The second paper (Wright *et al.*, 2015) is also about tunnels. It describes the investigation of ingress of sand and water to an operational London Underground tunnel lined with cast-iron segments, and the monitoring and planning of remedial grouting to stop the ingress and stabilise the tunnel linings. An observational approach was adopted with a specially designed wireless monitoring system to enable quick set-up and continuous monitoring.

The third paper (Linde-Arias *et al.*, 2015) describes the depressurisation of the Lambeth Group to enable the safe construction in an urban area of, at the time, the largest sprayed concrete caverns in London. The two caverns are turnouts enabling the Crossrail route to split, going on to Kent or Essex. The practical measures adopted will be of interest to anyone planning to construct a tunnel in water-bearing sand.

Next up is a paper on shearing resistance during pile installation in sand by Lim and Lehane (2015). Surface stress transducers were used to measure shear stresses at the interface between driven piles and sand on model piles installed at different sites. The interface was found to behave according to a Coulomb friction law relating to radial effective stress and interface friction angle. There was no post-peak reduction in shear stress, except in saturated sand where installation was rapid.

The fifth paper is by Indraratna *et al.* (2015) and considers vertical drain installation and the development and properties of smear zones in clay caused by penetration and withdrawal of the mandrel. This soil disturbance was investigated by taking undisturbed samples from around an installed vertical drain and observing changes in the volume compressibility, permeability anisotropy and water content.

The sixth paper (Divall and Goodey, 2015) is about twin-tunnel-induced ground movements in clay. The authors performed two-dimensional plane strain centrifuge tests on twin tunnels at different spacing and found that the second tunnel caused greater volume loss than would be expected by superposition. The settlement trough of the second tunnel was also wider on the side of the first tunnel.

The seventh paper (Shepley, 2015) describes the optimisation of water injection nozzles to aid closed-ended tubular pile jacking and reduce installation forces, again using centrifuge tests. It also investigates the effect of water injection through the side or the base of the pile on the shaft and base resistance. The load tests found that water injection resulted in a permanent decrease in shaft resistance, an effect not observed for base-exiting nozzles. Nozzle geometry was also found to be important. These findings will improve the cost-effectiveness of piling.

The final paper in this first instalment of the themed issue, is about offshore soil mixing (Bellato *et al.*, 2015). It focuses on the development of cutter soil mixing for offshore improvement of soft seabed deposits, with particular emphasis on environmental aspects. A full-scale trial was undertaken in a water-filled shaft, where water quality was monitored during construction and also samples of the improved soil were taken to verify the efficacy of the technique. Since the geotechnical properties of the seabed are an important consideration for offshore developments, for instance wind farms, the use of environmentally friendly and cost-effective ground improvement techniques may improve the feasibility and design of offshore foundations.

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. To make a more active contribution there are also regular opportunities for new editorial advisory panel members.

We hope that you find this themed issue on construction processes and installation effects stimulating, and of practical use to you as geotechnical engineers.

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