

Cite this article

Ong DEL and Rahman MM (2022)
Editorial.
Geotechnical Research 9(2): 63–64,
<https://doi.org/10.1680/jgere.2022.9.2.63>

Editorial

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Editorial

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On behalf of the Editorial Board of *Geotechnical Research*, welcome to volume 9, issue 2 of 2022. *Geotechnical Research*, as the Institution of Civil Engineers' first gold Open Access (OA) journal, maximises the impact of research papers and knowledge-based case studies across a broad spectrum of geotechnical issues. As with most other OA journals, authors pay a publication fee to publish in *Geotechnical Research*. It does, however, provide a variety of discounts to disadvantaged researchers, particularly those from countries in the International Network for the Availability of Scientific Publications (INASP). A discount scheme like this aims to reduce the cost of publicising scientific results from developing countries.

First and foremost, we are pleased to welcome Professor Hoe I. Ling of Columbia University, USA as our newest Editorial Board Member. Professor Ling will undoubtedly strengthen the quality of our journal with his many years of experience in the fields of geosynthetic-reinforced soil structures, soil constitutive modelling, earthquake engineering, and numerical and centrifuge modelling. Welcome on board, Professor Ling!

Continuing the theme of ground improvement in large-scale, challenging geotechnical works of Li *et al.* (2022), Lavanya and Kumar (2022) and Shuttle *et al.* (2022) in the previous issue, Liu *et al.* (2022) innovatively explored the concept of partial cement replacement using fly ash and a proprietary additive, DuraCrete, to stabilise the very soft dredged mud of Port of Brisbane, Australia. It has been discovered that in terms of cement percentage reduction, fly ash is the most effective replacement material. DuraCrete, on the other hand, is more cost-effective since a smaller amount of DuraCrete can replace a bigger volume of cement for a similar strength gain. This outcome will undoubtedly help engineers develop alternative, more sustainable design mixes for soft soil stabilisation that may easily meet design strength criteria while generating less carbon dioxide.

For the first time, research from Giri *et al.* (2022) shows how the proposed innovative wireless sensor network (WSN)-inertial measurement unit (IMU) system's sensor data patterns and magnitudes may be used to identify and explain toppling failures, as well as how sensor data can be incorporated into the isolated

block analysis method for effective topple monitoring. The authors also recommend that in future research, other elements impacting toppling failure and sensor data, such as surface roughness (e.g. Peerun *et al.*, 2019; Wang *et al.*, 2022) of the base and blocks, noises and other environmental trigger mechanisms, should be also incorporated.

The wave-induced dynamic response and instability of a low-permeability deformable caisson-type quay wall (CQW) with backfill soil exposed to standing waves are investigated by Ülker and Baksı (2022). The investigation shows that it is indeed possible for such a wall–soil system to be adversely affected not only by seismic liquefaction (e.g. experience from Kobe port quay wall failure), but also by wave-induced instantaneous liquefaction.

Can *et al.* (2022) describe in detail how twice-failed tunnel sections were successfully redesigned and finally constructed. In the project, two tubes were planned for the Bahçe–Nurdag tunnel, Turkey's longest railway tunnel at around 10 km. The tunnel-boring machine (TBM) stuck at 1267 m into the excavation of the second tube, which began near the Nurdag portal. Due to the TBM jamming, the second tube was abandoned, and a third tube was eventually and successfully constructed using detailed three-dimensional finite-element analyses considering seismicity.

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