Editorial

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This Special Issue presents recent case histories that exemplify the state of the practice when applying soil mechanics, analysing data and solving problems involving unsaturated soils.

The papers included in the Special Issue include written versions of contributions to the workshop titled 'The State of Practice in Unsaturated Soil Mechanics' held at the 19th International Conference on Soil Mechanics and Geotechnical Engineering in Seoul in September 2017, run under the auspices of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) and TC106 - the technical committee concerned with unsaturated soils within the ISSMGE.

Unsaturated soils are widely encountered and need to be dealt with in many engineering problems, for example foundations, fills, embankments, pavements, slopes and waste containment systems. In many cases true predictions of performance and true assessments of safety cannot be made without use of unsaturated soil mechanics. However, the use of unsaturated soil mechanics in practice is not routine. The case histories presented here draw on previous and develop new experiences of how unsaturated soil mechanics is best applied in practice with beneficial effect.

Unsaturated soil mechanics is used in the design of a light weight soil nail/shotcrete retention system in deep unsaturated clays leading to significant cost savings and environmental benefits **(Herraman)**. It is also used to model numerically the response of driven piles to infiltration, as observed in a field test site underlain an expansive clay and weathered shale **(Liu et al.)**. The effectiveness of a geobarrier system, used to protect unsaturated soil slopes from infiltration and strength loss, is demonstrated by **Rahardjo et al.** through a series of field trials. **Satyanaga et al.** highlights further the benefits of a geobarrier system, and how the system can be modelled using numerical analysis software and analytical techniques, achieving good agreement with field observations.

The details of these papers will be of interest to practitioners from industry to learn about good practice, and to researchers and teachers from academia to identify knowledge gaps and clarify teaching and knowledge transfer needs.

We acknowledge the work done by the authors and the reviewers, who assured high standard contributions. We would also like to thank the journal's Editors and staff for their assistance in putting the Special Issue together.

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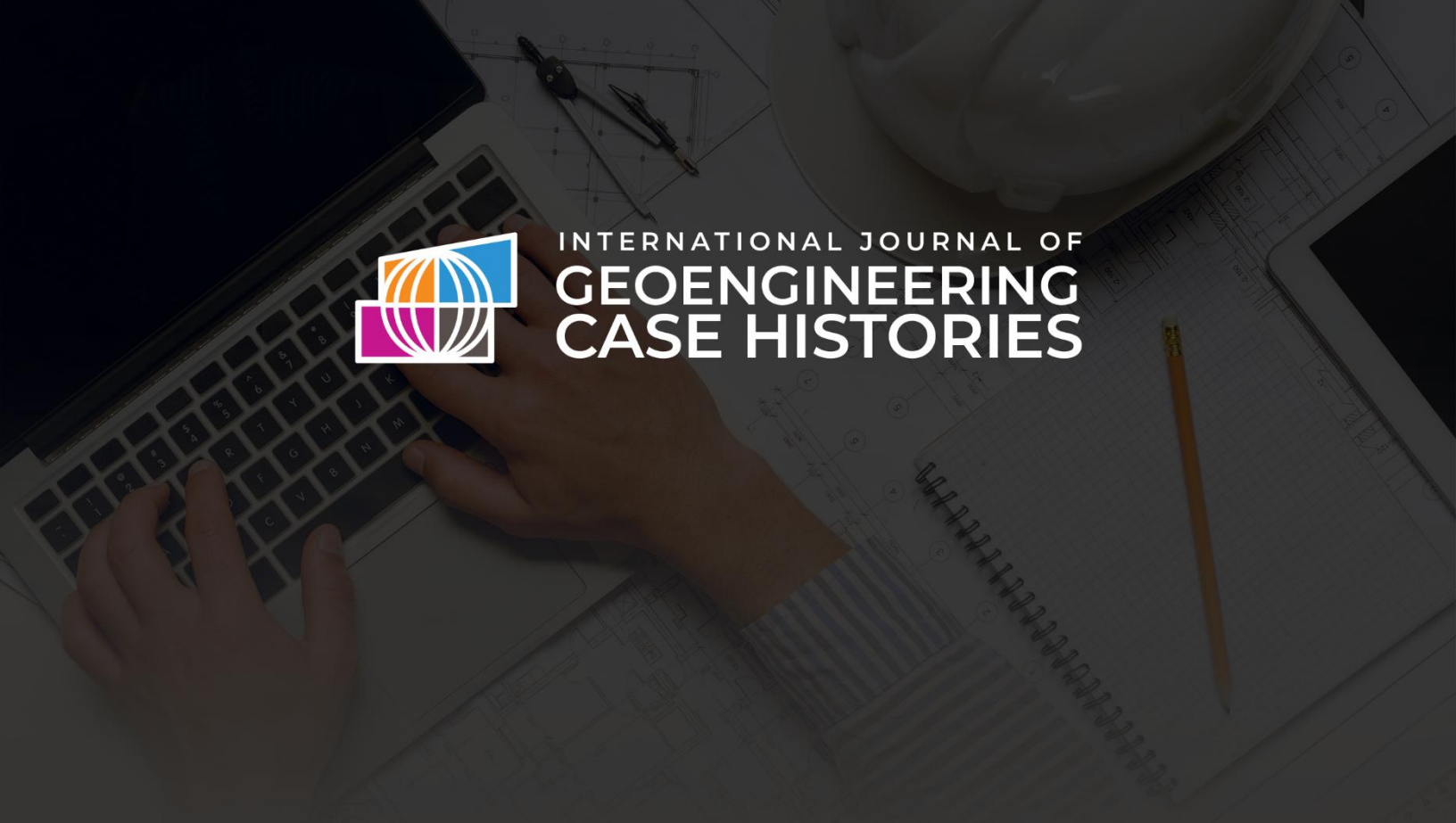
Herraman, R. (2019). A Lightweight Soil Nail Retaining Wall in Unsaturated Clay. International Journal of Geoengineering Case Histories, Volume 5, Issue 1, pp. 1-11, doi: 10.4417/IJGCH-05-01-01

Liu, Y., Vanapalli, S.K., Nyambere, C.-F. and Mohamoud, H. (2019). Numerical Simulation Results of the Mechanical Behavior of Single Piles in Expansive Soil. International Journal of Geoengineering Case Histories, Volume 5, Issue 1, pp. 12-25, doi: 10.4417/IJGCH-05-01-02

Reference: Russell, A., Caicedo, B., and Toll, D. (2019). Editorial. International Journal of Geoengineering Case Histories, Vol.5, Issue 1, p. i - ii. doi: 10.4417/IJGCH-05-01-00.

Rahardjo, H., Satyanaga, A. Gofar, N., Leong, E.C., Kew, J.H., Wang, C.L. and Wong, J.L.H. (2019). Geobarrier System for Protection Against Rainfall-induced Slope Failure. International Journal of Geoengineering Case Histories, Volume 5, Issue 1, pp. 26-42, doi: 10.4417/IJGCH-05-01-03

Satyanaga, A., Rahardjo, H. and Hua, C.J. (2019). Numerical Simulation of Capillary Barrier System under Rainfall Infiltration. International Journal of Geoengineering Case Histories, Volume 5, Issue 1, pp. 43-54, doi: 10.4417/IJGCH-05-01-04



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GEOENGINEERING
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