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Ground Improvement

Contemporary Issues in Ground Improvement Techniques

Evaluation of long-term behaviours of
geogrids: a review

Experimental investigation of installation
damage for geogrids

Plane strain FE analysis of arching in a
piled embankment

Finite-element study of arching behaviour in
reinforced fills

Extensible geosynthetics and stone-
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Editorial

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I am grateful to the honorary editor and the editorial advisory panel for giving me the opportunity to act as a guest editor of this themed issue of *Ground Improvement* on 'Contemporary Issues in Ground Improvement Techniques'. The authors of a number of papers which were submitted to the 12th Conference of the International Association for Computer Methods and Advances in Geomechanics (IACMAG), held in Goa, India, from 1–6 October 2008 under the theme of 'Geomechanics in the Emerging Social & Technological Age', were invited to develop their manuscripts to meet the requirements for publication in this journal. Seven of these papers are published in this issue of *Ground Improvement*. I am grateful to the authors of these papers for extending their fullest co-operation in preparing the manuscripts, taking into account the comments raised during the reviewing process. I would like to acknowledge the IACMAG for approving publication of these papers in this issue of *Ground Improvement*.

This issue contains some very interesting analytical, experimental and field studies in the context of ground improvement. The range of topics covered in these papers include a theoretical approach to review the long-term behaviour of geogrids (Jeon, 2010); an experimental investigation of the installation damage to geogrids (Jeon and Bouazza, 2010); finite element analyses of arching in a piled embankment (Zhuang *et al.*, 2010); and arching behaviour in reinforced fills (Potts and Zdravkovic, 2010), together with analyses of soil reinforced with extensible geosynthetics and stone columns (Deb *et al.*, 2010) and consolidation using prefabricated vertical drains (Basu *et al.*, 2010). In addition,

interesting case histories from four ground improvement projects in Malaysia – each utilising a different technology – are described by Raju and Yandamuri (2010).

I hope that readers of *Ground Improvement* will find these papers provide an insight into some of the interesting current issues in the field of ground improvement.

REFERENCES

- Basu P, Basu D and Prezzi M (2010) Analysis of PVD-enhanced consolidation with soil disturbance. *Ground Improvement* 163(4): 237–249.
- Deb K, Basudhar PK and Chandra S (2010) Extensible geosynthetics and stone-column-reinforced soil. *Ground Improvement* 163(4): 231–236.
- Jeon HY (2010) Evaluation of long-term behaviours of geogrids: a review. *Ground Improvement* 163(4): 189–195.
- Jeon HY and Bouazza A (2010) Experimental investigation of installation damage for geogrids. *Ground Improvement* 163(4): 197–205.
- Potts VJ and Zdravkovic L (2010) Finite element study of arching behaviour in reinforced fills. *Ground Improvement* 163(4): 217–229.
- Raju VR and Yandamuri HK (2010) Ground improvement for infrastructure projects in Malaysia. *Ground Improvement* 163(4): 251–263.
- Zhuang Y, Ellis EA and Yu HS (2010) Plane strain FE analysis of arching in a piled embankment. *Ground Improvement* 163(4): 207–215.