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Guest Editor

Prof. Tatsunori Matsumoto

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June Issue: Guest Editors on Foundations
Edited by Prof. Tatsunori Matsumoto

A special issue on Deep Foundations is also planned and to be edited by Prof. Tatsunori Matsumoto with the assistance of Dr. Der Wen Chang and this is expected in June 2011. Professor Harry G. Poulos, Prof. Bengt Fellenius and several others are expected to contribute in this issue together with Prof. Tatsunori Matsuoka.

Prof. Matsumoto is now with Kanazawa University in Japan for nearly 32 years. He was educated at the Kanazawa University and received his Doctoral Degree from Kyoto University for his work on steel pipe piles in 1989. He has extensive research and practical experience on piled foundations and piled raft foundations. Prof. Matsumoto has a Shake Table Facility for the study of dynamic and earthquake type of behaviour of piled foundations. He has also worked on the centrifuge with pile groups and piled raft foundations in collaboration with Taisei Corporation. His research work on piled raft foundations range from the simplified calculation methods of Poulos - Davis and Randolph (PDR Method), Burland's method to approximate computer based methods such as the strip on spring and plate on spring approaches and hybrid methods. He has also worked on more rigorous method using boundary elements and finite elements. Prof. Matsumoto also has wide experience in the seismic design of raft and piled raft foundations. Prof. Matsumoto is one of the authors of the computer software PRAB—Piled Raft Analysis with Batter Piles. With this software piled raft foundation can be analyzed with vertical and horizontal loads as well as moment.

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FOREWORD

The Southeast Asian Geotechnical Society (SEAGS) was formed over 40 years ago and has been an important factor in the growth of geotechnical engineering in the Southeast Asian region. SEAGS has made a very important contribution to the dissemination of geotechnical knowledge by publishing the journal Geotechnical Engineering, which first appeared in 1970. A number of influential papers have appeared in this journal, generally dealing with regional issues and case histories but also with geotechnical problems on a global scale.

In recent years, several of the original countries comprising SEAGS have grown to such an extent that they have formed their own national geotechnical groups. A number of these countries have formed the Association of Geotechnical Societies of South East Asia (AGSSEA) which now interact and cooperate with SEAGS. Currently, the President of SEAGS and Chairman of AGSSEA are Dr. Ooi Teik Aun and Professor K.Y. Yong respectively, while the Secretaries General are Professor Dennes Bergado and Mr. Kenny Yee.

SEAGS and AGSSEA now cooperate in producing Geotechnical Engineering, and in order to respond to the growth of geotechnics in the region, the editors have decided to re-focus the journal and to produce a series of theme issues that deal with specific areas of geotechnical engineering.

This present issue deals with deep foundations, a subject that has been of abiding interest to engineering professionals in the region over many years. Indeed, with the remarkable growth in the number and height of structures, studies of deep foundations and their behaviour under various scenarios have become a matter not only of research interest, but also of intense practical and economic interest. It is being recognised increasingly that traditional methods of deep foundation design that may have been adequate in past times may not be suitable for today's circumstances, where much larger loads may be acting on the piles and where piles may be subjected not only to direct structural loads but to loads imposed by ground movements arising from such sources as earthquakes, excavations and tunnel construction. It is also being recognised that in such cases, the sources of movement may also change the stress state in the ground so that the ground conditions during and after construction may be different from those encountered during the site investigation. Such differences need to be recognised and allowed for in the design process. It must also be recognised that there may well be "side effects" that arise from construction-related ground movements that may adversely affect existing foundation

A further trend, and one that is to be applauded, is the increasing use of pile load testing, not only as a means of verifying the capacity and integrity of the as-constructed piles, but also as an adjunct to pile design. Many of the elements of uncertainty that are present in pile design may be reduced by carrying out tests on trial piles as part of the design process. However, in such cases, it is essential to understand the limitations of the test procedure being and to interpret the test results accordingly, taking into account the test configuration and test setup, the means of applying load and supplying reaction, and the means of measurement of the pile responses. In particular, care should be taken to allow for residual stresses that exist in the pile prior to testing, as failure to do so may lead to misinterpretation of the contributions to the pile resistance of the shaft and the base.

The nine papers in this issue cover a broad range of topics in deep foundations, including load testing (3 papers), analysis and design issues (2 papers), fundamental understanding of pipe pile behaviour (1 paper), piled raft foundations (2 papers), and two case histories, one involving the foundations for the Taipei 101 tower, formerly the world's tallest building, and the other a proposed 151 storey tower in South Korea.

Professor Tatsunori Matsumoto from Japan is the editor for this issue and has been instrumental in attracting the papers that appear here, and especially, in securing a number of papers from Japan. He has done a fine job in coaxing and encouraging the authors of the papers, arranging for the review of the papers, and editing the final manuscripts. He deserves the thanks of the journal readership for his untiring efforts. He has been assisted by

Professor Der-Wen Chang of Taiwan, and by Professor Balasubramaniam (Bala), from Australia, whose links with SEAGS extend over many years.

It is to be hoped that the readers of this issue will benefit from the information and knowledge that is contained within the papers, and that they may find occasion to apply this knowledge in their own professional practice.

H.G. Poulos

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ACKNOWLEDGEMENT

This Special Issue on Deep Foundations is edited by Prof. Tatsunori Matsumoto with the assistance of Prof. Der Wen Chang as co-editor. Prof. Matsumoto is with Kanazawa University for nearly 32 years and has made excellent contributions in Piled Foundations starting with his Doctoral Research at Kyoto University on steel pipe piles as early as 1989. He has extensive research and practical experience on piled foundations and piled raft foundations. Prof. Matsumoto has a Shake Table Facility for the study of dynamic and earthquake type of behaviour of piled foundations. He has also worked on the centrifuge with pile groups and piled raft foundations in collaboration with Taisei Corporation. His research work on piled raft foundations range from the simplified calculation methods of Poulos - Davis and Randolph (PDR Method), Burland's method to approximate computer based methods such as the strip on spring and plate on spring approaches and hybrid methods. He has also worked on more rigorous method using boundary elements and finite elements. Prof. Matsumoto also has wide experience in the seismic design of raft and piled raft foundations. Prof. Matsumoto is one of the authors of the computer software PRAB—Piled Raft Analysis with Batter Piles. With this software piled raft foundation can be analyzed with vertical and horizontal loads as well as moment. The co-editor Prof. Der Wen Chang is currently a Professor at the Tamkang University in Taiwan. Prof. Chang recerived his Doctoral Degree from University of Texas at Austin in 1991. His research interests are in soil-structure interaction, earthquake geotechnical engineering and soil dynamics. Prof. Chang is a valuable member of the Chinese Geotechnical Society in Taipei serving as Secretary General; he also played a key role in the 17th Southeast Asian Geotechnical Conference held in Taipei in May 2010.

The contributing authors in this issue are :Kiyoshi Yamashita**,** Junji Hamada and Takeshi Yamada; K. Watanabe**,** H. Sei, T. Nishiyama and Y. Ishii; N. Suzuki and T. Seki; K. Matsuzawa and T. Matsumoto; Suriyah Thongmunee**,** Shun-ichi Kobayashi and Tatsunori Matsumoto ; Ching-Han Yu; Bengt H. Fellenius ; H.G. Poulos, J.C. Small and H. Chow ; and Ahmad Abdelrazaq, Frances Badelow, Sung Ho-Kim, and Harry G. Poulos.

Special thanks are due to Prof. Harry G Poulos for his valuable advice and participation in the review of most of the papers; each paper is reviewed at least by two other reviewers. No doubt the papers contained in this issue will be of great interest to those in practices as well as in teaching and research. On behalf of the Association of Geotechnical Societies in Southeast Asia, the Southeast Asian Geotechnical Society and the Editorial Panel of the Geotechnical Engineering Journal, we express our sincere gratitude to the Editors Prof. Tatsunori Matsumoto, Prof. Der Wen Chang, Prof. Harry G. Poulos and the contributing authors and reviewers.

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