

GEOTECHNICAL ENGINEERING

March 2017: Climate Change, Environmental Geotechnics and Geo-hazards

**Edited by
Kazuya Yasuhara, Farrokh Nadim and Dennes Bergado**

TABLE OF CONTENTS

<u>List of Papers</u>	<u>Page</u>
1: Geo-disasters in Japan in the Context of Climate Change By K. Yasuhara, S. Kawagoe and K. Araki	01-11
2: Climate change impacts in a large-scale erosion coast of Hai Hau district, Vietnam and the adaptation By Do Minh Duc, Nguyen Manh Hieu and Nguyen Chau Lan	12-25
3: Subsidence and shoreline retreat in the Ca Mau Province – Vietnam: Causes, consequences and mitigation options By K. Karlsrud, B.V. Vangelsten and R. Frauenfelder	26-32
4: Rainfall Erosivity Variability for Penang Island By A. S. Yahaya, F. Ahmad, Z.A Mohtar and S. Suri	33-37
5: Influence of increased precipitation on the transient seepage through levees during flood events By A. Scheuermann, J. Brauns and A. Bieberstein	38-44
6: Use of Low Carbon and Low Cost (LC2) Materials in Climate Change Adaptation Measures By H. Hazarika	45-52
7: Performance Monitoring of Bridge Foundations under Multi-hazards By W. F. Lee, C. I. Yen and C. K. Huang	53-59
8: Analysis and Simulations of Flood Control Dikes and Erosion Protection Schemes using PLAXIS FEM 2D and SLIDE Softwares By N. Chanmee, D.T. Bergado, T. Hino and L.G. Lam	60-71
9: Arresting rainfall-induced red soil run off in a farmland by inhibitory adaptation measures By K. Araki, N. Yasufuku, K. Iwami, K. Okumura, K. Omine and K. Vilayvong	72-81
10: Iron and Steel Slag Properties and Mechanisms for Carbon Dioxide Fixation in a Low- carbon Society By M. Umino, H. Komine, S. Murakami, K. Yasuhara, K. Setoi and Y. Watanabe	82-89
11: Development of Gross National Safety Index for Natural Disasters By O. Kusakabe, M. Kikumoto, K. Shimono, K. Itoh, H. Inagaki, S. Ohsato and K. Watanabe	90-101
12: Flooding Hazards and Potential Risks due to Heavy Rain and Sea Level Change in Shanghai, China By Y. Yuan, Y. S. Xu and S.L., Shen	102-108

13: Modeling impact of future climate on stability of slope based on general circulation model By S. Soralump and T. Chaithong	109-116
14: Geotechnical Measures for Uttarakhand Flash Flood-2013, India By C. Ghosh and I. Pal	117-127

GEOTECHNICAL ENGINEERING

June 2017: Mass Transit Projects & Contributed papers

Edited by
Kok Hun Goh, Jeyatharan Kumarasamy, Richard Hwang & San Shyan Lin

TABLE OF CONTENTS

<u>List of Papers</u>	<u>Page</u>
1: Deep Excavations in Taipei Metro Construction By R. N. Hwang and Z. C. Moh	1-13
2: Development of Reinforced Concrete Segmental Lining Design for MRT Bored Tunnels in Singapore By D Wen	14-23
3: Geology and its Impact on the Construction of Singapore MRT Circle Line By Jeyatharan Kumarasamy	24-31
4: Constructing the cut-and-cover tunnels and bored tunnels of the Singapore Downtown Line By K.H. Goh and Y. Zhang	32-44
5: Bored Tunnelling directly below Buildings in Singapore Downtown Line By K.H. Goh, S. S. Ng and K.S. Ho	45-55
6: Application of Gravity Survey in Urbanized City Environment By Charles Im, John Davies, Frank Collar and Seng Tiok Poh	56-63
7: Water Sealing by Wire Brush with Grease for Pneumatic Caisson Method at Great Depth Underground By M. Kawasaki, K. Yoshizaki and M. Sugimoto	64-71
8: Geotechnical Challenges of Kolkata Metro Construction By N. Som	72-79
9: Use of Pressure Relief Wells to Optimise Ground Improvement Layer Thickness in Deep Excavations By Gerardo Agustin Pittaro	80-85
10: Bukit Timah Granite Formation: Engineering Properties and Construction Challenges By C. Veeresh and K.H. Goh	86-91

11: 41 years of Mass Transit Underground Railways By L.J.Endicott	92-95
12: Simulation of H&V shield behavior at sharp curve by kinematic shield model By T. N. Huynh, H.V. Pham, M. Sugimoto, Y. Tanaka, H. Ohta and K. Yasui	96-103
13: Comparison of the Effect of Fine Content and Density towards the Shear Strength Parameters By Badee Alshameri, Aziman Madun and Ismail Bakar	104-110
14: Shaft Resistances of Jacked Open-ended PHC Pipe Piles By Xiao-long Zhou, Hai-lei Kou, Chang-hong Li	111-114
15: Estimation of Shrink/Swell Potential and Variability of Clays by Small-Scale Suction Tests By P.R. Stott and E. Theron	115-125
16: Pullout Tests on Strips with Anchorage Elements under Low Stresses By M. R. Selamat, M. H. Roslan, and M. A. M. Ismail	126-133
17: Numerical Simulation Analysis and In-situ Monitoring of Long Narrow and Deep Foundation Pit By Li Changhong* ,Zhou Xiaolong ,Zhang Long ,Wei Xiaoming and Li Wanling	134-139

GEOTECHNICAL ENGINEERING

September 2017: Deep Foundations

Edited by
Tatsunori Matsumoto, Der Wen Chang & San Shyan Lin

TABLE OF CONTENTS

<u>List of Papers</u>	<u>Page</u>
1: Challenges and Recommendations for Steel H-Piles Driven in Soft Rock By K. Ng and T. Sullivan	1-11
2: Experimental Study on Pile Foundations Having Batter Piles Subjected to Combination of Vertical and Horizontal Loading at 1-G Field By Anh-Tuan Vu, T. Matsumoto, S. Kobayashi and S. Shimono	12-24
3: Fundamental Experiments on a Reinforcement Method using Sheet Pile Wall for Bridge Pile Foundations Subjected to Pile Embedment Reduction and Numerical Validation By T. Tikanta, T. Matsumoto, A.T. Vu, S. Kobayashi, S. Shimono and C. Bamrungwong	25-39
4: Numerical Studies on Performance of Offshore Wind Turbine Composite Suction Pile in Sand Subjected to Combined Lading By S.S. Lin, Y.C. Chiang, X.H. Lin, H.Y. Wang and S.S. Hsiao	40-46
5: Pile Group Interaction Based on Field Monitoring and Load Tests By K. Yamashita, S. Wakai, J. Hamada and T. Tanikawa	47-57
6: In-Situ Full Scale Load Tests and Reliability Evaluation of Bearing Capacity for Nodular Cast-In-Place Concrete Pile By K. Watanabe, A. Mitsumori, H. Nishioka and M. Koda	58-64

7:	Development of Steel Pipe Pile Combined with Ground Improvement in Narrow Spaces By K. Watanabe, T. Yamamoto and T. Sudo	65-72
8:	Design and Analysis of Composite Foundation for High-Rise Buildings By K. Watanabe, N. Suzuki and M. Sahara	73-81
9:	Pervious Backfill Material Made from Landslide Debris for Road Base Construction By Hung-Jiun Liao, Chin-Lung Chiu, Chung-Kuang Chien, Yi-En Tang and James Cheng	82-86
10:	Advances in Numerical Modelling of Different Ground Improvement Techniques By E. Heins, M. Milatz, A. Chmelnizkij, K.-F. Seitz and J. Grabe	87-94
11:	Load Sharing Mechanism of Combined Pile-Raft Foundation (CPRF) under Seismic Loads By Ashutosh Kumar and Deepankar Choudhury	95-101
12:	Deflection Behaviour of GFRP Bar Reinforced Concrete Passive Bored Pile in Deep Excavation Construction By J. L. Zhou, E. Oh, X. Zhang, M. Bolton, H. Y. Qin and L. Zhang	102-109
13:	Loading and Dynamic Response Considerations for the Design of Wind Turbine Foundations on South African Soils By Byron Mawer, Denis Kalumba and Charles Warren-Codrington	110-117
14:	Comparison of Numerical Analyses of Behaviour of Column-Reinforced Foundations By Mounir Bouassida, Mnaouar Klai, Seifeddine Tabchouche and Mekki Mellas	118-122
15:	Particle Image Velocimetry Analysis on the Sinking of Shallow Foundation in 2D By P. Pizette and N-E. Abriak	123-125
16:	Attempt of Simple Calculation on Studying Failure Mechanism of DM Columns By B. T. T. Nguyen, T. Takeyama and M. Kitazume	126-136
17:	Microzonation of Liquefaction Hazard using Liquefaction Index in Babol City By A. Janalizadechoobasti, M. Naghizadeh rokni, and R. Charaty	137-143

GEOTECHNICAL ENGINEERING

December 2017: Papers by Guest Editor Akira Murakami & Contributed Papers

Edited by:
Akira Murakami, San Shyan Lin & Mounir Bouassida

TABLE OF CONTENTS

<u>List of Papers</u>	<u>Page</u>
1: Modelling the Effects of Static Shear on the Undrained Cyclic Torsional Simple Shear Behaviour of Liquefiable Sand <i>By Gabriele Chiaro, L.I. Nalin De Silva and Junichi Koseki</i>	01-09
2: Numerical Study on the Design of Reinforced Soil by Vertical Micropiles	10-18

3: Soil-water Coupled Analysis of Pore Water Pressure Dissipation in Performance Design - Examinations of Effectiveness in Reclaimed Ground <i>By Toshihiro Nonaka, Shotaro Yamada and Toshihiro Noda</i>	19-31
4: Comparison of Sheared Granular Soils: Same void ratio but Considerably Different Fabric <i>By Y. Fukumoto and S. Ohtsuka</i>	32-39
5: Coupled Analysis of Navier-Stokes and Darcy Flows by the Brinkman Equations <i>By S. Arimoto, K. Fujisawa and A. Murakami</i>	40-49
6: Numerical Investigation on Mechanical Behaviour of Natural Barrier in Geological Repository of High-Level Radioactive Waste <i>By Y. Kurimoto, Y. L. Xiong, S. Kageyama and F. Zhang</i>	50-57
7: Change of Soil Properties in the Bengawan Solo River Embankment due to Drying–Wetting Cycles <i>By Trihanyndio Rendy Satrya, Ria Asih Aryani Soemitro, Toshifumi Mukunoki and Indarto</i>	58-68
8: Soft Ground Improvement at the Rampal Coal Based Power Plant Connecting Road Project in Bangladesh <i>By Sudipta Chakraborty, Ripon Hore, Fahim Ahmed and M. A. Ansary</i>	69-75
9: Assessment on the effect of fine content and moisture content towards shear strength <i>By Badee Alshameri , Aziman Madun and Ismail Bakar</i>	76-86
10: Ground Response Based Preliminary Microzonation of Kathmandu Valley <i>By Dipendra Gautam, Hemchandra Chaulagain, Hugo Rodrigues and Hem Raj Shahi</i>	87-92

List of Papers

Page

11: Investigation of the Use of Sugarcane Bagasse for Soil Reinforcement in Geotechnical Applications <i>By V. Oderah and D. Kalumba</i>	93-102
12: Quasi-Static Numerical Modelling of an ore Carrier Hold <i>By S. Daoud, I. Said, S. Ennour and M. Bouassida</i>	103-109
13: Shear Strength of an Expansive Overconsolidated Clay Treated with Hydraulic Binders <i>By A. Mahamedi and M. Khemissa</i>	110-115
14: Numerical Modelling of Retaining Wall Resting on Expansive Soil <i>By Bushra Suhale Al-Busod, Safa Hussain Abid Awn and Hassan Obaid Abbase</i>	116-121
15: Simplified Method for Designing Piled Raft Foundation in Sandy Soils <i>By N. M. Alsanabani, T. O. AL-Refeai and A. O. Alshenawy</i>	122-128
16: Stabilization of Seepage Induced Soil Mass Movements using Sand Drains <i>By R. Ramkrishnan, Karthik, Mukund S. Unnithan, R. Kiran Balaji, M. Athul Vinu and Anju Venugopalan</i>	129-137
17: Experimental Study on the Durability of Soil-Cement Columns in Coastal Areas <i>By Pham Van Ngoc, Brett Turner, Jinsong Huang and Richard Kelly</i>	138-143

18: The Change Laws of Strength and Selection of Cement-sand Ratio of Cemented Backfill <i>By Xiaoming Wei, Changhong Li, Xiaolong Zhou, Baowen Hu, Wanling Li</i>	144-150
19: Numerical Modelling of Ground Subsidence at an Underground Coal Gasification Site <i>By T.C. Ekneligoda, L.T. Yang, D. Wanatowski, A.M. Marshall, and L.R. Stace</i>	151-154

GEOTECHNICAL ENGINEERING

**March 2018: Issue to Honour Prof M. R. Madhav
for his Contributions in Geotechnics Through Indian Geotechnical Society,
ISSMGE and Universities in IIT Kanpur, IIT Bangalore, Saga etc.**

**Edited by:
Madhavi Latha & Murali Krishna**

TABLE OF CONTENTS

<u>List of Papers</u>	<u>Page</u>
1: Rational Assessment of Modulus of Subgrade Reaction <i>By Harry G. Poulos</i>	01 - 07
2: Effectiveness of Stone Column Reinforcement for Stabilizing Soft Ground with Reference to Transport Infrastructure <i>By S. Basack Indraratna and C. Rujikiatkamjorn</i>	08 - 14
3: Pile design and group behaviour; a case study of large tank foundations in soft soil conditions <i>By W.F. Van Impe, P.O. Van Impe and A. Manzotti</i>	15 - 29
4: Granular Columns for Geotechnical Applications <i>By V Sivakumar</i>	30 - 44
5: Ground Engineering Using Prefabricated Vertical Drains: A Review <i>By V.A. Sakleshpur, M. Prezzi, and R. Salgado</i>	45 - 64
6: Soil Reinforcement under Oblique Pull - An Updated Discretization <i>By S. Patra and J.T. Shahu</i>	65 - 72
7: Effect of Facing Slope on the seismic response of Geocell Walls <i>By Madhavi Latha G and Manju G. S.</i>	73 - 83
8: Evaluation of Resilient Modulus of Geosynthetic Reinforced Layers Using Repeated Load Triaxial Tests <i>By Sudheer S Prabhu, Lekshmi Suku and G L Sivakumar Babu</i>	84 - 89
9: Seismic Analysis of Reinforced Soil Wall considering Oblique Pull-out of Reinforcements: A Review <i>By Ritwik Nandi and Deepankar Choudhury</i>	90 - 98
10: Characterization of the Soil Samples from the Lonar Crater, India <i>By Nevin Koshy, S. U. Sushalekshmi, Susmita Sharma, Jeevan Joseph, Vikas Sharma, D. N. Singh,</i>	99 - 105

<u>List of Papers</u>	<u>Page</u>
11: Encased Columnar Inclusions in Soft Grounds - A Review <i>By J.Jayapal and K.Rajagopal</i>	106 - 118
12: Influence of Shear Stiffness of Geocell Mattress on the Performance of Strip Footings: A Numerical Study <i>By P. A. Faby Mole, S. Sireesh and M. R. Madhav</i>	119 - 127
13: Interference of Two Closely-Spaced Footings on Finite Sand Layer <i>By Macharam Rohith, Sasanka Mouli, and Umashankar Balunaini</i>	128 - 135
14: Stone Columns/Granular Piles for Improving Liquefiable Sites: Case studies <i>By A. Murali Krishna, A. Madan Kumar, Utpal Kr. Baruah</i>	136 - 142
15: Biogeotechnological Methods for Mitigation of Liquefaction <i>By S. Wu, B. Li, J. He and J. Chu</i>	143 - 149
16: A Critical and Comparative Study on 2D and 3D Analyses of Raft and Piled Raft Foundations <i>By V. Balakumar, Min Huang, Erwin Oh and A. S. Balasubramaniam</i>	150 - 164

GEOTECHNICAL ENGINEERING

June 2018:
Special Issue on
50th Anniversary of the Southeast Asian Geotechnical Society

Edited by
Noppadol Phienwej, Suttisak Soralump, Apiniti Jotisankasa, Suched Likitleruang
and Tirawat Boonyatee

TABLE OF CONTENTS

<u>List of Papers</u>	<u>Page</u>
1: State-of-the-Art Research in Geo-energy and Geo-environmental Engineering: Energy Pile and Earthen Capillary Landfill Cover System <i>By Charles W.W. Ng, Jason L. Coo & Anthony Gunawan</i>	1-11
2: Validation of a New Simplified Hypothesis B Method for Calculating Consolidation Settlement of Clayey Soils Exhibiting Creep <i>By J.-H. Yin and W.-Q. Feng</i>	12-21
3: Finite Element Analysis to Characterize the Lateral Behaviour of a Capped Pile Group <i>By Chao-Kuang Hsueh, San-Shyan Lin and Dominic E. L. Ong</i>	22-31
4: Proposed Design Guideline of Dynamic Compaction for Practicing Engineers <i>By Tjie-Liong Gouw</i>	32-40
5: Settlement of River Dykes and Their Adjacent Residences on Soft Clay Deposits After the Tohoku-Pacific Ocean Earthquake in 2011 <i>By K. Yasuhara, S. S. Yang, I. Horikawa and H. Yamane</i>	41-48
6: Application of Photogrammetry and Image Analysis for Rock Slope Investigation <i>By D-H. Kim, A. S. Balasubramaniam and I. Gratchev</i>	49-56
7: Longitudinal and Transverse Interactions between Stacked Parallel Tunnels Constructed using Shield Tunnelling in Residual Soil <i>By C.W. Boon and L.H. Ooi</i>	57-71
8: Common Blind Spots in Ground Investigation, Design, Construction, Performance Monitoring and Feedbacks in Geotechnical Engineering. <i>By Shaw Shong Liew</i>	72-84
9: Detrimental Effects of Lateral Soil Movements on Pile Behaviour <i>By D.E.L. Ong</i>	85-95
10: Optimising Cement Dosage in Ground Improvement and Early Quality Control Schemes <i>By S.C. Chian</i>	96-103
11: Effects of Preloading of Struts on Retaining Structures in Deep Excavations <i>By Richard N. Hwang and Lup-Wong Wong</i>	104-114

12: Anchors of Anchored Slopes in Taiwan <i>By Hung-Jiun Liao, Shih-Hao Cheng and Chun-Chung Chen</i>	115-122
13: Hexagonal Wire Mesh Panel Tensile Behaviour due to Weaving Patterns <i>By Chiwan Hsieh, Zhi-Yao Cai, and Wen-Shin Shuy</i>	123-130
14: Trenchless Excavations for Underground Pipelines in Difficult Geology <i>By Keh-Jian Shou, Jonas Yen, and Chih-Ying Hsieh</i>	131-135
15: Liquefaction-Induced Settlement of Structures on Shallow Foundation <i>By C.W. Lu, L. Ge, M.C. Chu, and C.T. Chin</i>	136-139
16: Evaluation of Failure of Embankment Slope Constructed with Expansive Soils <i>By Kuo Chieh Chao, Jong Beom Kang and John D. Nelson</i>	140-149
17: Strength and Stiffness Parameters of Bangkok clays for Finite Element Analysis <i>By Suched Likitlersuang, Chhunla Chheng, Chanaton Surarak and Arumugam Balasubramaniam</i>	150-156
18: Failure of Riverbank Protection Structure and Remedial Approach <i>By S. Horpibulsuk, A. Udomchai, M. Hoy, A. Chinkulkijniwat, and D. B. Van</i>	157-163
19: Recent Developments of Soft Ground Improvements using Prefabricated Vertical Drains (PVD) and Deep Cement Mixing (DCM) <i>By D.T. Bergado, A.S. Balasubramaniam and P.V. Long</i>	164-181
20: Study on Shield Operation Method in Soft Ground by Shield Simulation <i>By Mitsutaka Sugimoto, Hideyuki Tanaka, Ngoc Thi Huynh, Salisa Chaiyaput, Le Gia Lam, and Jian Chen</i>	182-191

September 2018: Contributed

Edited by
Dominic Ong, San Shyan Lin & Ooi Teik Aun

TABLE OF CONTENTS

<u>List of Papers</u>	<u>Page</u>
1: Strength Characteristics of Soda Waste Treated with Fly Ash and Lime <i>By Hai-lei Kou and Wen-gang Zhang</i>	01-03
2: Groundwater Recharge Estimation in Kathu, Phuket using Groundwater Modelling <i>By A. Puttiwongrak, K. Sam O and V. Sakanann</i>	04-10
3: Seismic Microzonation of Cox's Bazar Municipal Area Bangladesh <i>By A. Imtiaz, A. Barua, M. Sakib and M.A. Ansary</i>	11-17
4: Geophysical Investigation in Bukit Merah Reservoir <i>By M. R. Selamat, A. Shafie, R. Saad, and M. M. Nordiana</i>	18-22
5: Effect of Ground Disruption on the Strength of Gatch Soil in Kuwait <i>By Ziad Abdelsalam and Nabil Ismael</i>	23-26
6: Greenheart Timber Strip Reinforcement for Reinforced Soil Retaining Walls <i>By Sean A. Surujdas and C.N.V. Satyanarayana Reddy</i>	27-31
7: HWYL Method for Predicting Settlement of Soft Soil <i>By Yudhi Lastiasih and Herman Wahyudi</i>	32-35
8: Bearing Capacity and Settlement Study on Small-Scale Piled-Raft Groups in Sand <i>By Sengara, IW., Roesyanto, Krisnanto, S., Jayaputra, A. A., and Irsyam, M</i>	36-46
9: Influence of Two Rough Parallel Joint Surface Profiles on Stress Wave Energy Dissipation <i>By Yexue Li, Hongke Pan, Li Qinand Jianhui Fan</i>	47-54
10: Failure Mode for Creep Area of High Open-pit Slope Under the Influence of Underground Mining <i>By Wang Ning, Zhou Xiaolong, Zhu Dengyuan</i>	55-61
11: Properties of Desert Sands Reinforced with Ground Tire Rubber in Kuwait <i>By Nabil Ismael and Hasan Al-Sanad</i>	62-66
12: A Study on Behaviour of Vertical Pile in Sand under Uplift Load <i>By R. Saravanan and P.D. Arumairaj</i>	67-72
13: Numerical Simulations of K_0 Triaxial Tests on Collapsible Porous Clay <i>By J.C. Ruge, A. López, F.A. Molina-Gómez, R.P da Cunha and J.E. Colmenares</i>	73-81