



**09:00**            **Opening Ceremony (Venus II & III, Level 3)**

**Welcome speeches by Profs C.F. Leung, M. Madhav and P.S.E. Pinto**

**09:15**            **Keynote Lecture 1 (Chair: Prof. M. Madhav, India)**

*Ground Improvement – Principles and Applications in Asia (pp. 43)*

**V R Raju, Singapore**

**09:45**            **Keynote Lecture 2 (Chair: Prof. M. Madhav, India)**

*Soft Soil Foundation improved by Vacuum and Surcharge Preloading at Ballina Bypass, Australia (pp. 95)*

**Buddhima Indraratna, Cholachat Rujikiatkamjorn, Richard Kelly and Henk Buys, Australia**

**10:15**            **Tea Break & Exhibition**

**10:45 – 12:15 Parallel Technical Sessions**

**Session 1 (10:45 – 12:15)**  
**(Topic: Case Histories Involving Major Projects)**

**Venue: Venus II&III**

**Chair: Prof. T. Abdoun, USA**

*Consolidation Control of Improved Reclamaimd Clay Ground by Cone Penetration Test (pp. 185)*

**Hideki Yoshida, Masaaki Katagiri and Masaaki Terashi, Japan**

*Jet Grouting and Its Applications (pp. 209)*

**V. Ganeshan and Jee Yi Yng, Singapore**

*Explosive Compaction of Granular Soils and In Situ Liquefaction Testing Using Sequential Detonation of Explosives (pp. 199)*

**W. Blair Gohl, Todd Martin and Ron J. Elliott, Canada**

*Execution of Stabilized Surface Layer on Soft Ground by the Pneumatic Flow Mixing Method (pp. 191)*

**Yasuhiro Okubo, Hiroshi Shinsha, Takahiko Shiina and Masaki Kitazume, Japan**

*Ground Improvement Techniques for East Coast Expressway Phase 2, Malaysia (pp. 705)*

**Y.W. Yee and C.G. Chua, Malaysia**

*Reclamation Execution Utilizing Cement Treated Soil by the Pipe Mixing Method (pp. 231)*

**Hiroshi Shinsha, Masaya Watanabe, Syozo Ikeda and Takahiro Kumagai, Japan**

*Ground Improvement for Deep Excavation of City Square Mall (pp. 697)*

**Hai Tian, S. A. Tan, S. Tjahyono, C. H. Lim and H. Tanaka, Singapore**



Session 2 (10:45 – 12:15)

(Topic: Laboratory & Centrifuge Modelling)

Venue: Jupiter III

**Chair: Prof. M. Huang, China**

*Characterization and Effective Utilization of Coal ASH as Soil Stabilization on Road Application (pp. 469)*

**Ahmad Rifa'i, Noriyuki Yasufuku and Kazuyoshi Tsuji, Indonesia**

*Approach to Characterization of Cyclic Behavior of Artificially Bounded Soils (pp. 453)*

**Sara Rios, António Viana Da Fonseca and Nilo C. Consoli, Portugal**

*Effectiveness of Cement Kiln Dusts in Stabilizing Expansive Clay (pp. 515)*

**Pranshoo Solanki and Musharraf M. Zaman, USA**

*Development of Yield Locus by Ageing of Cement-Mixed Soil in Drained Triaxial Compression (pp. 491)*

**A. Ezaoui, F. Tatsuoka, Y. Maeda and Y. Sasaki, Japan**

*Internal Erosional Behaviour of Lignosulfonate Treated Dispersive Clay (pp. 549)*

**J. S. Vinod, Buddhima Indraratna and M. A. A. Mahamud, Australia**

*Experimental Study of Engineering Behavior of Fibrous Peat Soil Reinforced by Cement Column (pp. 533)*

**Sina Kazemian, Arun Prasad, Vahed Ghiasi and Bujang B. K. Huat, Malaysia**

*Deformation Behaviour of Soil Under Vacuum Consolidation (pp. 475)*

**B. R. Deepa and R. G. Robinson, India**

## ISGI09 TECHNICAL SESSION

(Wednesday, 9 December 2009)



- 13:15**      **Keynote Lecture 3 (Chair: Dr Z.C. Moh, Taiwan)**  
*Formulation of a Concept and Realistic Soil Parameters for the Foundation of Randomly Located Structures on a Mega Scaled Project* (pp. 13)  
**Serge Varaksin, Kenny Yee and Wong Leong Toh, France**
- 13:45**      **Keynote Lecture 4 (Chair: Dr Z.C. Moh, Taiwan)**  
*New Composite Foundation Techniques for Soil Improvement in China* (pp. 67)  
**Hanlong Liu, China**

### 14:15 – 15:30 Parallel Technical Sessions

**Session 3 (14:15 – 15:30)**  
**(Topic: Instrumentation and Monitoring)**  
**Venue: Venus II&III**

**Chair: Mr Albert Ho, Hong Kong**

*Evaluation of Earth Pressure Measurements in Three Iranian Embankment Dams* (pp. 367)  
**Ali Asghar Mirghasemi and Bahareh Shoghli, Iran**

*Soil Improvement Using Vibroflotation Close to Buried Structures* (pp. 389)  
**Tong Seng Chua, Yeow Tek Seah, Weng Kee Chew and Gary Ng, Singapore**

*Advanced Geotechnical Monitoring of Prefabricated Vertical Drains in Soft Clay* (pp. 361)  
**Tarek Abdoun, Victoria Bennett and Matthew Barendse, Australia**

*Long Term Field Monitoring of Chemically Stabilized Sand with Grouting* (pp. 383)  
**Hirokazu Akagi, Kazuhito Komiya and Mitsuhiro Shibasaki, Japan**

*Using Wire-Less and Internet M2M Technology to Improve the Data Delivery of Inclinometer Measurement Faster* (pp. 395)  
**Nick Osborne, Chew Chiat Ng, Guan Hong Tan and Ye Kong Poh, Singapore**

*Comprehensive Site Investigation and Construction Monitoring for Tank Farms on Improved Ground* (pp. 647)  
**Jonathan Daramalingam, Kam Weng Leong and Sven Partzsch, Singapore**



Session 4 (14:15 – 15:30)  
(Topic: Design and Analytical Methods)

Venue: Jupiter III

**Chair: Mr Kenny Yee, Malaysia**

*Element Analysis of Consolidation of Soil Under Surcharge and Vacuum Preloading (pp. 285)*

**Liqiang Sun and Shuwang Yan, China**

*Improving Embankment Construction Efficiency by Increasing the Lift Thickness (pp. 295)*

**Takayuki Adachi, Satoshi Nishimoto and Atsuko Sato, Japan**

*Creep Effect on Response of Granular Pile Reinforced Ground (pp. 275)*

**Madhira R. Madhav, K. Suresh and E. C. Nirmala Peter, India**

*In-Situ Study on Stress Distribution of Foundation Improved by Y-Section Pile (pp. 319)*

**Yong-Hui Chen, Xin-Quan Wang, Hanlong Liu, Lian Jiang and Ting Zhang, China**

*Innovative Finite Element Model for Analysis of Soil Reinforcements (pp. 311)*

**K. X. Liu, F. H. Lee and K. Y. Yong, Singapore**

**15:30**

**Tea Break & Exhibition**



16:00 – 17:30 Parallel Technical Sessions

Session 5

(Topic: Case Histories)

Venue: Venus II&III

**Chair: Prof. R.G. Robinson, India**

*Case Studies of Ground Improvement Techniques Used on a Coal Export Terminal Development in Newcastle, Australia (pp. 615)*

**Jianxin Niu, Chin Hiang Chua and Brett Hawkins, Singapore**

*A Case Study: Land Slide Treatment Carried Out in Murree, Pakistan, During the Last Decade (pp. 597)*

**M. A. Kamal Syed Riaz Hussain D. A. B. Hughes and S. A. Khan, Pakistan**

*Case Histories on Design and Construction of Jet Grouted Ground for Trenchless Projects (pp. 605)*

**James Kwong, Kealohi Sandefur and Reyn Hashiro, USA**

*Vibro Replacement Columns for Shipyard Infrastructure at Pipavav, Gujarat, India (pp. 763)*

**Deepak Raj and C. V. Dikshith, India**

*Successful Application of Vacuum Consolidation at Port of Brisbane (pp. 747)*

**Peter Boyle, Daniel Berthier, Geoffrey Holding, Jay Ameratunga and Cynthia De Bok, Australia**

*Case Studies on Ground Freezing in Taipei (pp. 623)*

**Jhih-Yong Jhang, Chien-Min Wu and Chong-Cheng Kao, Taiwan**

*Foundation Works for a Sewage Treatment Plant Using Ground Improvement Methods in Malaysia (pp. 677)*

**Y.W. Yee, C.G. Chua and H.K. Yandamuri, Malaysia**



**Session 6**

**(Topic: Design and Analytical Methods)**

**Venue: Jupiter III**

**Chair: Dr D. Q. Yang, Australia**

*Settlement Response of Strip Footings Resting on Reinforced Elastic Foundation (pp. 353)*

**Arindam Dey, Prabir K. Basudhar and Sarvesh Chandra, India**

*Analytical Solution on Vertical Dynamic Responses of PCC Piles in Soft Soil (pp. 247)*

**Xuanming Ding, Hanlong Liu and Yumin Chen, China**

*Behavior of Lattice-Type Ground Improvement by Cement-Mixing for Liquefaction Mitigation (pp. 257)*

**Junichi Koseki and Tsutomu Namikawa, Japan**

*Pullout and Large Scale Direct Shear Test of Tire Derived Geomaterial Reinforced with Geogrid (pp. 561)*

**T. Tanchaisawat, T. Hino, D. T. Bergado and K. Shehzad, Thailand**

*Settlement of Soft Clays with Prefabricated Vertical Drain (pp. 345)*

**A. K. Sinha, V. G. Havanagi and S. Mathur, India**

*Analysis of Stress Distribution in Large Diameter Concrete Pipe Pile Supported Embankment (pp. 239)*

**Bo Zhang, Hanlong and Jian Chu, Singapore**

**17:30 End of 1<sup>st</sup> Day**

**17:30 Association for Geotechnical Societies of Southeast Asia (AGSSEA) Council Meeting  
(by invitation)**

## ISGI09 TECHNICAL SESSION

(Thursday, 10 December 2009)



- 09:00**      **Keynote Lecture 5 (Chair: Dr TA Ooi, Malaysia)**  
*Ground Improvement in Tokyo/Haneda International Airport Expansion Project*  
*(pp. 27)*  
**Masaki Kitazume, Japan**
- 09:30**      **Keynote Lecture 6 (Chair: Dr TA Ooi, Malaysia)**  
*Rehabilitation and Reinforcement of Marina EXPO Breakwaters* (pp. 77)  
**Pedro Simõesêco E Pinto, Alexandre Pinto and Rui Tomasio, Portugal**
- 10:00**      **Tea Break & Exhibition**
- 10:30 – 12:15** **Parallel Technical Sessions**

**Session 7 (10:30 – 12:15)**  
**(Topic: Recent Development)**

**Venue: Venus II&III**

**Chair: Prof. K. Ishihara, Japan**

*The Rehabilitation of Drainage Canal Embankment* (pp. 171)

**Thanadol Kongsomboon, Thailand**

*Mechanism of Cross Jet and its Application* (pp. 159)

**Hiroshi Yoshida and Kunio Saito, Japan**

*Use of Waste Streams and Microbes for in situ Transformation of Sand Into Sandstone* (pp. 177)

**Wouter R. L. Van Der Star, Edris Taher, Marien P. Harkes, Maaïke Blauw, Mark C. M. Van Loosdrecht and Leon A. Van Paassen, Holland**

*Development of The Gravel Cement Compaction Pile Method* (pp. 139)

**Hirochika Hayashi, Satoshi Nishimoto, Yoshihiro Kogai, Noriyuki Hashimoto and Kiyotaka Idoguchi, Japan**

*Cutter Soil Mixing CSM, a Innovative Solution for Retaining Walls and Foundations* (pp. 131)

**Manfred Schöpf and Patrik Wenzl, Germany**

*In-Situ Test on Desaturation by Air Injection and Its Monitoring* (pp. 151)

**Mitsu Okamura, Masaya Takebayashi, Katsuji Nishida, Nao Fujii, Motoharu Jinguji, Takehiko Imasato, Hideaki Yasuhara and Emiko Nakagawa, Japan**

*Biosealing: A Method for in situ Sealing of Leakages* (pp. 125)

**M. Blauw, J. W. M. Lambert and M. N. Latil, Holland**

*Improvement of Soil Deposits by Curved Grouting* (pp. 145)

**Hiroshi Yoshida, Kunio Saito and Kenji Ishihara, Japan**



Session 8 (10:30 – 12:15)

(Topic: Laboratory and Centrifuge Modelling)

Venue: Jupiter III

**Chair: Prof. I. Masyhur, Indonesia**

*Dehydration and Strength Properties of Cement-Mixed Soils with a Mechanical Dehydration (pp. 483)*

**Masaki Sano, Kouki Zen, Guanqi Chen and Kiyonobu Kasama, Japan**

*Centrifuge Modeling of Pile-Supported Earth Platforms with Non-Uniform Cement-Soil Mixing Piles (pp. 461)*

**Maosong Huang and Bo Li, China**

*Amelioration of Expansive Clay Sub-Grades with Stabilized Fly Ash Cushions (pp. 447)*

**Ajjarapu Srirama Rao and Guda Sridevi, India**

*Shaking Table Test on the Dynamic Earth Pressure of Cement-Mixed Ground (pp. 579)*

**Kiyonobu Kasama, Kouki Zen and Guangqi Chen, Japan**

*Mechanisms of Sulfate Heave Prevention in Lime Stabilized Clays Through Pozzolanic Additions (pp. 555)*

**Anisha Sachdeva, Michael J. McCarthy, Laszlo J. Csetenyi and M. Roderick Jones, United Kingdom**

*Experimental Study on At-Bottom Vacuum Preloading Method for Soft Soil Improvement (pp. 541)*

**Bao Tian Wang and Vu Manh Quynh, Vietnam**

*Effect of Pumping Procedure on Mechanisms of TGC Grouting (pp. 501)*

**Adel M. El-Kelesh, Ken-Ichi Tokida, Tadao Oyama, Shunsuke Shimada and Takamitsu Sasaki, Egypt**

*Effect of Smear on Load Capacity of Sand Compaction Piles (pp. 509)*

**A. Juneja and B. A. Mir, India**

## ISGI09 TECHNICAL SESSION

(Thursday, 10 December 2009)



**13:15**      **Keynote Lecture 7 (Chair: Prof. J. Koseki, Japan)**  
*Behavior of Deep Cement Mixing (DCM) and Stiffened Deep Cement Mixing (SDCM) Piles Under Full Scale Tests and Embankment Loading (pp. 3)*  
**D. T. Bergado, P. Jamsawang, P. Voottipruex and W. Cheang, Thailand**

**13:45**      **Keynote Lecture 8 (Chair: Prof. J. Koseki, Japan)**  
*The Performance of Soil Nailed Systems (Page 107)*  
**Michael C. R. Davies, New Zealand**

### 14:15 – 15:30 Parallel Technical Sessions

**Session 9 (14:15 – 15:30)**

**(Topic: Case Histories)**

**Venue: Venus II&III**

**Chair: Dr I. H. Wong, Singapore**

*Effective Road Embankment Construction on Fibrous Peat Using Hydraulic Sand-Fill (pp. 663)*

**D. E. L. Ong, K. T. Kho, A. D. R. Danial and L. Y. Tai, Malaysia**

*Ground Improvement with Vibro Stone Columns — A Case Study from Iran (pp. 713)*

**H. Elahi and M. Sabermahani, Iran**

*Green Technology for Sustainable Foundation Treatment of a High Embankment (pp. 685)*

**Kenny Yee and Teik Aun Ooi, Malaysia**

*Jet Grouting (JGP) for Deep Excavation — The Importance of Quality Control (pp. 721)*

**Nick Osborne and David Ng Chew Chiat, Singapore**

*Test and Analysis on Reinforcement Effect of High Vacuum Compaction Method in Soft Soil (pp. 755)*

**Chang-Cun Gu, Yu-Ting Zhang and Hua-Shun Chen, China**

*Design and Performance Review of a Trial Embankment on Deep Soft Ground Near Brisbane Airport, Australia (pp. 791)*

**D. Q. Yang, J. Ameratunga, I. Shipway, J. Dunstan and R. Lambert, Australia**



Session 10 (14:15 – 15:30)  
(Topic: Variability/Quality Control)

Venue: Jupiter III

**Chair: Mr J. Wehr, Germany**

*Numerical Limit Analysis on the Seismic Bearing Capacity of Anti-Liquefaction Ground (pp. 411)*

**Jun Kutsuna, Kouki Zen, Guangqi Chen and Kiyonobu Kasama, Japan**

*Numerical Study of Effects of Spatial Variability on Cement-Treated Column Strength (pp. 419)*

**Tsutomu Namikawa and Junichi Koseki, Japan**

*Application of Settlement Rate Method in Hangpu Expressway (pp. 403)*

**C. C. Gu, L. M. Gong, J. S. Mei and L. X. Hou, China**

*Study on a Liquefaction Countermeasure for Flume Structure by Sheet-Pile with Drain (pp. 437)*

**Kazutaka Otsushi, Tomoo Kato, Takashi Hara, Atsushi Yashima, Yu Otake, Kazuhiko Sakanashi and Ayumi Honda, Japan**

*Performance Based Design (PBD) of Liquefaction Countermeasure for Kisogawa Water Channel (pp. 425)*

**Takashi Hara, Kazutaka Otsushi, Atsushi Yashima, Tomoo Kato, Yu Ootake, Kazuhiro Sakanashi and Ayumi Honda, Japan**

*Quality Assurance of Cement Treated Soil by Wet Grab Sampler (pp. 431)*

**Masaki Kitazume and Satoshi Nishimura, Japan**

**15:30**

**Tea Break & Exhibition**



**16:00 – 17:30 Parallel Technical Sessions**

**Session 11 (16:00 – 17:30)**

**(Special Topic on Ground Improvement using Geosynthetics, Supported by International Geosynthetics Society, Southeast Asia Chapter)**

**Venue: Venus II&III**

**Chair: Dr I. Yogarajah, Singapore**

*Special Lecture: Innovative Geosynthetics Applications to Ground Improvement in Southeast Asia*  
**S.H. Chew, Singapore**

*Behavior of Geosynthetics Reinforced Wall Subject to Blast*  
**H.W. Tan, Singapore**

*Case Studies on Slope Reinforcement of A Raised Small Dam and A 30M High Steep Slope (pp. 631)*  
**D. E. L. Ong, K. T. Kho, A. D. R. Danial and L. Y. Tai, Malaysia**

*Classification of Geotubes and Related Analysis Methods (pp. 263)*  
**Wei Guo, Jian Chu and Shuwang Yan, Singapore**

*Bioengineering and Geosynthetics Treatments for Slope Improvement*  
**L. Albert, Malaysia**

*PVD Enhancement with Vacuum Pressure for Soft Bangkok Clay Improvement (pp. 571)*  
**J. Saowapakpiboon, D.T. Bergado, S. Artidteang, S. T. Montalbo and N. Teerachaikulpanich, Thailand**

## ISGI09 TECHNICAL SESSION

(Thursday, 10 December 2009)



Session 12 (16:00 – 17:30)

(Other Topics)

Venue: Jupiter III

**Chair: Mr Y. W. Yee, Malaysia**

*Effect of Carbon Storage Due to Ground Improvement by Log Piling (pp. 783)*

**Atsunori Numata, Masanori Hamada, Masaho Yoshida, Mario Tonosaki, Hiroaki Nakamura and Hikaru Kubo, Japan**

*Shear Strength Parameters of Scrap Tire Crumbs Reinforced with Scrap Tire Chips (pp. 799)*

**Mahmoud Ghazavi and Mohammadreza Mahmoudipour, Iran**

*Constructon on Sabkha Soils (pp. 777)*

**Mohamed M. Shahin, Libya**

*Electroosmotic Phenomena in Tropical Peat (pp. 525)*

**Afshin Asadi and Bujang B. K. Huat, Malaysia**

*Evaluation of Stabilization Effect of "T" Shaped Deep Mixing Column from SCPTU Data (pp. 375)*

**Guo-Jun Cai, Song-Yu Liu, J. Puppala Anand, Li-Yuan Tong, Guang-Yin Du and Fei Jing, China**

*Soil and Waste Treatment Using Biocement (pp. 165)*

**Jian Chu, Volodymyr Ivanov, Ming Fen Lee, Xiao-Ming Oh and Jia He, Singapore**

**18:30 Geotechnical Society of Singapore (GeoSS) AGM**

**(members only, Venue: Jupiter)**

**19:30 Conference cum GeoSS Dinner Banquet (Venue: Venus)**

**Best Paper Award**

**Presentation on next International Symposium on Ground Improvement**

## ISGI09 SITE VISIT

(Friday, 11 December 2009)



Meeting time: 9.30 am Furama Riverfront Hotel entrance

[Estimated disbursed time 1.30 pm at Singapore Flyer]

Upon picking up from the hotel, the bus will proceed to bring the visitors to the Pasir Panjang reclamation Phases 3 and 4 site. Visitors will be requested to submit indemnity forms for the site visit. After a short briefing on the site development and activities, visitors will be able to observe the fabrication of huge gravity caissons (refer to photographs which were taken from the earlier Phase 1 of the project) to be used as the wharf front structures for the site. In addition, a bird's eye view of the ongoing pilot ground improvement works can be seen from the caisson fabrication yard.

Singapore Flyer is a new Singapore attraction and one of the tallest and biggest flyer in the world. During the Singapore Flyer ride, visitors would be able to view many large ongoing infrastructure works in the area. These include the Marina Coastal Expressway where many ground improvements works are ongoing, as well as the huge Marina Sands Resort and the Garden on the Bay projects.

After the Singapore Flyer, visitors will be brought back to Furama Riverfront Hotel. Those who wish to stay in Marina Square area may choose to disburse directly after the Singapore Flyer ride.



*(Photographs of Pasir Panjang Phase 1 projects)*

## EXHIBITION INFORMATION



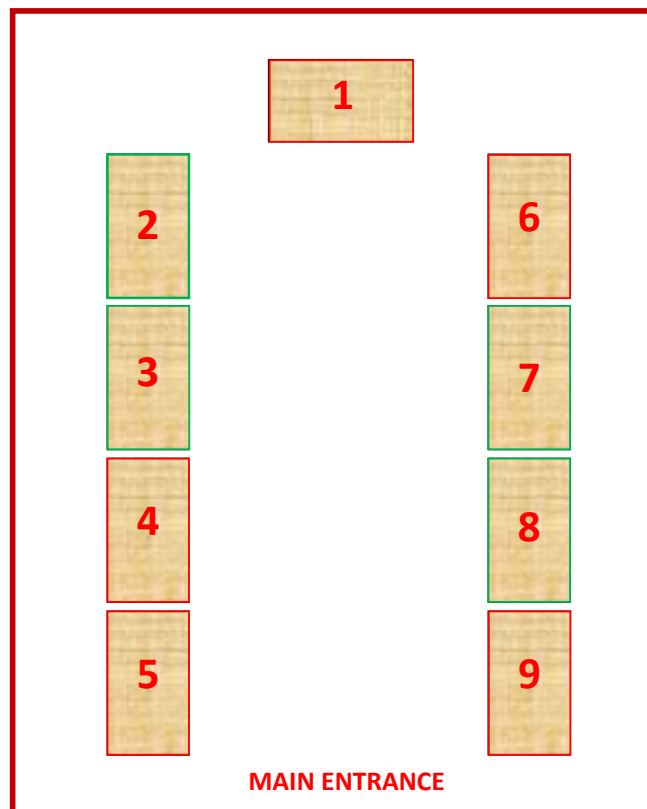
The exhibition hall is located in the Venus I Hall.

**Opening Hours:**

8.30am to 6.00pm on 9 December 2009 (Wednesday)

8.30am to 3.30pm on 10 December 2009 (Thursday)

<b>COMPANY</b>	<b>BOOTH NO.</b>
Keller Foundations (S.E.Asia) Pte Ltd	1
Liebherr-Singapore Pte Ltd	2
Zhao Yang Geotechnic Pte Ltd	3
Soilmec Far East Pte Ltd	4
Ryobi-Kiso (S) Pte Ltd	5
Cofra B.V	6
BAUER Technologies Far East Pte Ltd	7
Wicks	8
Menard Geosystems Singapore Pte Ltd	9



Venue I Hall (Not to scale)