



ISSMGE TC 211 GROUND IMPROVEMENT NEWSLETTER n°2, June 2011

Dear Reader,

As promised in our first Newsletter we inform you herewith about the workshop held during the 14th Asian Regional Conference in Hong Kong and about the progress with the organization of IS-GI Brussels 2012.

1 Workshop on 26 may 2011

During the 14th ARC a half day workshop has been organized with 8 very interesting presentations. Due to overlapping with other committee sessions the attendance was not very high but after most presentations through discussions took place.



Speakers at the 14 ARC Workshop



Attendance during the 14 ARC Workshop

The most important subjects treated during the presentations can be summarized as follows:

Jian CHU and Hang Long LIU : some recent development in quality control tests for prefabricated vertical drains (PVD's).

- Available tests for determining the discharge capacity (on straight drains and buckled drains), the tensile strength and the permeability of the filter
- Advantages of integrated PVD (= filter and core adhered together by heat melting)
- Existing methods for the on site control of the installation depth.

D.I. BERGADO : Proposed Modifications of the K- Stiffness for MSE structures on soft ground.

- Description of the K-stiffness method for the design of reinforced soil
- Measurements on an experimental MSE wall, installed on the AIT Campus
- Proposal for the modification of the original K-stiffness method.

Kenny YEE and Teik Aun OOI : Carbon footprint of Ground Improvement Methods – a case history.

- What is sustainable construction and carbon footprint
- Case history in Putrajaya = ground improvement instead of ground replacement (Installation of vertical drains, dynamic replacement, preloading and QA/QC by means of pressuremeter tests
- Aim : Better use of natural resource and reduced fuel consumption.



V.R. RAJU : QC Methods for Deep Vibro Techniques.

- Overview of different deep vibro techniques and applicability
- Quality control at different stages of work
- Soil Investigation & Design
- Execution (construction drawings & Method Statement, site preparation, treatment, real time monitoring supervision verification, post treatment tests).

Masaki KITAZUME : QA / QC for deep mixing method.

- Deep mixing method and applications
- QA / QC during and after execution
- Current design method for embankment stability: results of centrifuge tests and evaluation.

Jan MAERTENS – Noël HUYBRECHTS and Nicolas DENIES: Soil Mix - Belgium Research activities.

- Mechanical Characterization of soil mix material.
 - Soil inclusion analysis
 - Numerical simulation of the influence of soil inclusions
 - Characteristic strength
 - Large scale laboratory tests
- Durability tests.

Kenny YEE : On shore and off-shore compaction for a reclamation project.

- Case study : vibro compaction for the layers beneath 5m depth and dynamic compaction between 0 and 5m depth
- Case study : off share dynamic compaction and dynamic replacement
- QC by means of pressuremeter tests.

Babak HAMIDI : Validity of Relative Density for Quality Control of Cohesionless soils.

- History and development of relative density
- ASTM standards D2453 and D4254, their limits of application and included words of caution
- Errors (systematic, random and mistake)
- Different correlations = Soil properties are not based only on relative density =
- Conclusion: Due to its formulation, relative density is prone to large errors.

All presentations can be found on the TC211 Ground Improvement website : www.bbri.be/go/tc211



2 International Symposium GI Brussels 2012.

Situation at June 2011

Almost 180 abstracts have been received.

Abstracts per theme:

- Vibro and impact compaction: 20
- Prefabricated Vertical Drains: 13
- Vacuum Consolidation: 3
- Deep Mixing: 43
- Rigid Inclusions: 21
- Biogrout and other grouting methods: 14
- Soil Reinforcement: 32
- Others: 38

Based on the received abstracts the symposium themes have been redefined as follows:

- Vibro and impact compaction
- Vertical drains, vacuum consolidation and preloading
- Soil Mixing 1: Deep Mixing
- Soil Mixing 2: Soil stabilisation
- Rigid inclusions
- Biogrout and other grouting methods
- Soil reinforcement

Pre registration:

- Until now almost 60 pre-registrations were received for the International Symposium.
- 45 participants indicated to be interested to attend the short courses.

Sponsoring:

Already confirmed sponsors:

- Platinum: ABEF (Belgian Association of Foundation Contractors), DEME
- Gold: DENYS and LIEBHERR



Short courses:

During the meeting of the organizing committee of IS-GI Brussels 2012 it has been decided that 3 short courses will be organized on 30 May 2012 with the following themes:

- *Marine Ground Improvement*: coordinator Marc Van Den Broeck, van.den.broeck.marc@dredging.com
- *Deep Mixing*: coordinator Jan Maertens, jan.maertens.bvba@skynet.be
- *Rigid Inclusions*: coordinator Bruno Simon : b.simon@terrasol.com

Menard lecture:

As proposed by ISSMGE Chairman Jean-Louis Briaud the idea of organizing a Menard lecture was included in the terms of reference of our TC. Further to discussion with the Organizing Committee of IS-GI Brussels 2012 the idea of a “Menard lecture” being organized at the beginning of the symposium was proposed (two “Menard lectures” were held in the past) :

- to the TC members for formal approval
- to the ISSMGE council.

Louis Ménard has been a great Engineer and inventor.

The pressuremeter is known to all of you and the methods of calculating bearing capacity and settlement widely accepted.

Dynamic consolidation rotating plate anchors, annular vibro hammers were among his inventions.

Dynamic replacement, Vacuum consolidation, Controlled Modulus Columns were brought to reality by his successors since he died very young at the age of 46.

3 Other TC 211 related events:

Through members of the TC 211 we received information on the following events:

- International Conference on Ground Improvement and Ground Control – Transport Infrastructure Development and Natural Hazard Mitigation, ICGI Wollongong 2012, 30 October – 2 November 2012, www.icgiwollongong.com
We remind you that abstracts are due on 1st of July 2011.
This Conference, on the Antipodes of Brussels conference is co-sponsored by the TC 211, and belongs to the core activity of the TC 211.
We soon will be calling on a survey for ideas in the preparation of the S.O.A. report attributed to our TC211.
- Technical Session “Behavior and characterization of cemented and stabilized soils” at GeoCongress 2012 in March 2012, Ramiro.VerasteguiFlores@Urgent.be



4 Received information:

Software Program for Designing Columnar Reinforced Soils, leaflet transmitted by Prof. M. Bouassida. For further information: www.simpro-tn.com

5 Next Newsletter:

We will try to include in the next newsletter a list with recent references to publications and internet sites concerning the themes given in the terms of reference.

Please transmit all available information to the secretary Noël Huybrechts, noel.huybrechts@bbri.be

The next newsletter will be edited end 2011.