

Proceedings of the TC302 Symposium in Osaka 2011

**International Symposium
on Backwards Problem
in Geotechnical Engineering and
Monitoring of Geo-Construction**

-Towards ISO on Construction Control in Geotechnical Engineering-

July 14 and 15, 2011
Green Hall
Kensetsu-Koryu-kan,
NIshi-ku, Osaka, Japan

Organized by
TC-302 Forensic Geotechnical Engineering, ISSMGE
Joint Committee on Forensic GeoEngineering, D.P.R.I., Kyoto University

Under the auspices of
ISO/TC182 Working Committee, Japanese Geotechnical Society
Kansai Branch, Japanese Geotechnical Society

Edited by

Yoshi Iwasaki

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edited by
Yoshi Iwasaki, Geo-Research Institute

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Preface



Executive Chair TC302 Osaka Symposium

Yoshi Iwasaki

When the TC302 (Technical Committee on Forensic Geotechnical Engineering, ISSMGE), was started by the chairmanship of Dr.V.V.S.RAO as a continuation activity of TC40 in 2009, I had been asked to organize an international meeting by the Chairman of TC302.

It was in October, 2010 when I was attending the Conference of IS-ShangHai 2010, I had a chance to make a discussion on Back Analysis with Prof. Malcolm Bolton. He had agreed to come to Japan and to present a keynote address on Back Analysis by Results of Centrifugal Model Test.

On March 11, 2011, Eastern Japan had suffered from the severe triple damages from Earthquake, Tsunami, and Explosion of Nuclear Power. Dr.RAO had called me to advise to postpone the meeting. I was wondering if I should postpone the symposium or not. It was Professor Bolton who was very positive to come to Japan as the scheduled plan that resulted in keeping the data as planned.

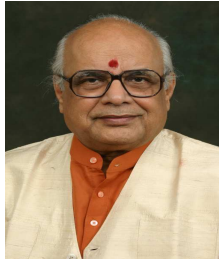
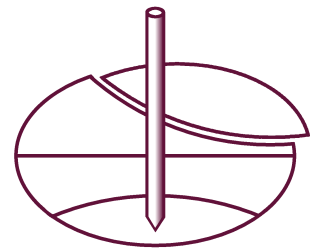
Most of the failures in construction industry were caused by geotechnical problems. Several case studies are presented in this Symposium.

As already proposed by Terzaghi and Peck almost half a century ago, Observational Method (OM) is the only way to avoid the failures in geotechnical engineering for most cases. OM has been widely accepted and practiced in Japan and eligible to take lead the creation of standard of OM as one of standard of the ISO182 (Geotechnique). It is necessary to have at least five member counties of ISO to make a new proposal to be approved.

The Osaka Symposium is expected to throw a mile stone leading to the Standardization of Observational Method in Geotechnical Engineering to avoid critical failure and dispute in geoenvironmental construction.

International Society for Soil Mechanics and Geotechnical Engineering

Société Internationale de Mécanique des Sols et de la Géotechnique



Dr.RAO, V.V.S.
Chairman
TC302"Forensic Geotechnical Engineering"
ISSMGE
International Society of Soil Mechanics and Geotechnical Engineering

Dear Colleagues

Terzaghi and Peck introduced Observational Procedure in Geo-engineering construction to fill the gap between the knowledge of site conditions and the assumed design conditions. Based upon the Observational Procedure, most projects have been successfully completed. Recently in the past decades, however, some of the geotechnical construction sites were reported in failure even with instrumentation for monitoring the process of construction. Forensic approach is a backwards problem where the final result is the given conditions and the process to the result is the question to be answered for.

The Symposium aims

1. to show the process of backwards problem from centrifugal experiments,
2. to identify the key factors in the failures including Nicoll Highway and Can Tho Bridge in Vietnam.
3. to overview the backwards problem of the field projects including failures,
4. to identify reasons why the instrumented geotechnical project resulted in failure,
5. to discuss the plausibility and applicability of total or effective methods to different types of the geotechnical engineering.
6. to overview the construction dispute and discuss the way to organize "Dispute Board" to avoid unnessesary difficulties when in failure.
6. to give recommendations to avoid geotechnical failure, and
7. to propose to take lead for creation of an ISO standard on "Construction Control of Geotechnical Engineering."

We have arranged some special topics related with the East Japan Great Tusnami and Nuclear Disaster.

8. Special Key Note Lecture (I) Backwards Problem on Acient Tunami

9 Special Key Note Lecture (2) Chernobyl Disaster in Ukraine

I hope the TC302 Osaka Symposium shall be a fruitfull discussions and provide the direction to go in the future to provide much safer and reliable geotechnical enfgineering for realization of the sustainable infrastructures in the world.

Best wishes,

Dr.RAO, V.V.S.
Chairman

ISSMGE Board Members

Contents

1. Learning from Reality: Lessons from Centrifuge Models	-----	1
<i>Malcolm Bolton, Department of Engineering, University of Cambridge</i>		
2. Failure Mechanism of Anchored Retaining Wall due to the Anchor Head Itself Broken	---	13
<i>Kazuya Itoh, Naotaka Kikkawa, and Yasuo Toyosawa, Construction Safety Research Group, National Institute of Occupational Safety and Health, (JNIOSH), Naoaki Suemasa and Toshiyuki Katada, Dep.t of Civil Eng., Tokyo City Univ., Japan</i>		
3. Failure Case Study of Tieback Wall in Urban Area, Korea	-----	19
<i>Jeong, Sang-Seom and Kim, Young-Ho, Dep. of Civil Eng., Yonsei Univ., Seoul, Korea, Kim, Myoung-Mo, Dep. of Civil and Envir. Eng., Seoul National Univ., Seoul, Korea</i>		
4. Reconstruction of the 869 Jogan Earthquake, the predecessor of the 2011 Tohoku earthquake, by geological evidence combined with tsunami simulation	-----	25
<i>Masanobu Shishikura, Y. Sawai, & Y. Namegaya, Active Fault and Earthquake Research Center, AIST, Geological Survey of Japan</i>		
5. Overview of Backwards Analysis in Geotechnical Engineering	-----	29
<i>Susumu Iai, Disaster Prevention Research Institute, Kyoto University</i>		
6. Collapse of Braced Excavation in Singapore	-----	35
<i>Kenji Ishihara, Research and Development Initiative, Chuo University</i>		
7. Importance of Taking Deformation of Substructure into Account for Bridge Design	-----	51
<i>Yukitake Shioi, Professor Emeritus, Hachinohe Inst. of Technology, Hachinohe, Japan</i>		
8. A Case Study of Long Term Settlement of Sensitive Soft Clay Due to Embanking	-----	63
<i>Akira Asaoka, Research Division for Earthquakes and Disaster mitigation, Association for the Development of Earthquake Prediction, (ADEP), JAPAN</i>		
9. Piping Failure of a Metro Tunnel Construction	-----	73
<i>Wei Feng Lee, Office of Res. & Dev., National Taiwan Univ. of Science and Technology Kenji Ishihara Research and Development Initiative, Chou University</i>		
10. Damages to Metro Tunnels due to Adjacent Excavations	-----	83
<i>Richard N. Hwang and S. W. Duann, Moh and Associates, Inc. Taipei, Taiwan C. H. Chen, Dep. of Rapid Transit Systems, Taipei City Government, Taipei, Taiwan</i>		

11. Observational Method applied to Settlement of Kansai Air Port ----- 89
Mamoru Mimura, Disaster Prevention Research Institute, Kyoto University
B. G. Jeon, Dep. of Civil and Environmental Engineering, Kyoto University, Japan
12. The Chernobyl Disaster in Ukraine.-Experience in Overcoming the Consequences of Accident and “Shelter” Object Transformation to Safe System ----- 103
Gramotkin I.I., General Director , State Specialized Enterprise “Chernobyl NPP”,
Nemchynov Iu.I., The first deputy director of the State research institute of building constructions(NIISK),
Nosenko V.F., Head of the department of Chief Project Engineers, Kiev “Energoproekt”
13. Remote Methods Researches of System "Base - Foundation - above Ground Building"-- 116
Viktor Shokarev and Valentina Rodnay, The state enterprise scientific research institute of building construction, Zaporozhye branch, Zaporozhye, Ukraine «Enorgodar-Geocenter», Enorgodar, Ukraine
Askar Zhussupbekov, Department of Civil Engineering, Eurasian National University of L.N. Gumilyov, Astana, Kazakhstan,
Andrey Shokarev, Zaporozhye State Engineering Academy, Zaporozhye, Ukraine
14. Dispute Boards, Resolution and Avoidance of Disputes in Construction Contracts ----- 122
 -Two Contracts and Three Arbitrations for One Incident-
Toshihiko Omoto, Graduate School of Management, Kyoto University
15. Forensic Issues of Adaption of Eurocodes of Geotechnical Engineering to Kazakhstan Geotechnical Norms ----- 133
Zhussupbekov Askar, Lukpanov Rauan, and Tulebekova Assel, Geotechnical Institute, Department of Civil Engineering, Eurasian National University of L.N. Gumilyov, Astana, Kazakhstan
16. Case Study on Causes and Countermeasures of a Largely Deformed Reinforced Earth Wall with Geotextile in Hyogo, Japan ----- 137
Satoru Shibuya and Jinsuk Hur, Dept. of Civil Engineering, Kobe University, Japan
Minsu Jung, Korea Institute of Construction Technology, Korea
17. Case Study of Reinforced Earth Wall Failure during Extreme Rainfall ----- 146
E. C. Shin, Department of Civil and Environmental Engineering, University of Incheon, Republic of Korea
S. D. Cho and K. W. Lee, Geotechnical Engineering Lab., Korea Institute of Construction Technology, Republic of Korea
18. A Failure of a Cut Slope and Deterioration of Shear Strength due to Weathering ----- 154
Akitoshi Mochizuki, Professor Emeritus, Graduate School of Tokushima Univ., Japan,
Xianfeng Ma, Department of Geotechnical Engineering, Tongji University,
Sreng Sokkheang, Research and Development Center, Nippon Koei Co.,Ltd., Japan

19. Forensic Analysis of Failure of Shoring Piles ----- 162
N. Santosh Rao, Nagadi Consultants Private Limited
20. Backwards Analysis for Retaining Wall System by Sheet Piles based upon Lateral Wall Displacement in Soft Ground, St. Petersburg ----- 168
Kenji Okajima, Department of Environmental Science & Technology, Mie University
Tadatsugu Tanaka, JARUS(The Japan Association of Rural Solutions for Environmental Conservation and Resource Recycling)
Askar Zhussupbekov, Department of Civil Engineering, Eurasian National University of L.N. Gumilyov, Astana, Kazakhstan
21. Rethink of failure of underground construction- lessons learned from Taiwan ----- 174
B. Hsiung, Dep. of Civil Eng., National Kaohsiung Univ. of Applied Sciences, Taiwan
T. Sakai, Maeda Corporation, Taiwan Branch
22. A Soil-Water Coupled Finite Element Analysis of Open-Cut Excavation for Soft Clay Deposit by an Elasto-Viscoplastic Model ----- 180
Yosuke Higo and Fusao Oka, Department of Civil and Earth Resources Engineering, Kyoto University, Kyoto, Japan
M.Nakano, Nakanoshima Rapid Railway Co. Ltd.
H.Mukai and T.Izumitani, Keihan Electric Railway Co. Ltd.
S.Takeda and K.Amano, Taisei, Toda, Tekken, and Kumagai Gumi JV
J.Nagaya, Geo Research Institute
23. An Alternative Approach as Observational Method Inferred from Monitored Data to Avoid the Failure of the Geotechnical Excavation in Singapore ----- 185
Yoshinori Iwasaki, Geo-Research Institute, Osaka, Japan
24. Enrollments of Technical Committee and Geoinformatics for Geoconstruction ----- 194
Toshihisa Adachi, Professor Emeritus Kyoto Univ., Principal Director, Geo Research Institute

The Symposium was partially supported by “Joint Committee on Forensic GeoEngineering/Chair Yoshi Iwasaki, (京都大学防災研究所一般共同研究“法地盤工学”に関する研究委員会:委員長 岩崎好規),” which was organized in April 2011 as one of the joint research projects under Disaster Prevention Research Institute, Kyoto University.