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Earthquake geotechnical engineering – A report of TC 4

Géotechnique parasismique – Compte rendu de la commission technique N° 4

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ABSTRACT: This paper presents a summary of the activities of Technical Committee 4 (TC4) Earthquake Geotechnical Engineering during tenure 1994-1997. The terms of reference, the TC4 meetings, the promotion of Conferences, Workshops and Special Sessions, the published documents, the interactions with other societies are described. Also some considerations related with the future activities of TC4 are presented.

RESUME: Cet article présente une description des activités du Comité Technique 4 (CT4) Génie Géotechnique Séismique pendant le période 1994-1997. Les termes de référence, les réunions du CT4, la réalisation de Conférences, les Workshops, les Réunions Spéciales, les documents publiés et l'interaction avec les autres sociétés sont décrits. Commentaires liés à la future activité de CT4 sont présentés.

1 INTRODUCTION

The invitation of President Michele Jamiolkowski to the Portuguese Society for Geotechnique, in order to host the Committee, was accepted and Pedro S. Sêco e Pinto was appointed as Chair. The activities of Technical Committee 4 (TC4) Earthquake Geotechnical Engineering have begun on October 1994, with contacts with core members and members pointed by the National Geotechnical Societies.

The final list was ready on December 1994 and includes 36 members from 28 countries.

This report summarises TC4 activities from October 1994 until September 1997.

2 TERMS OF REFERENCE

The terms of reference are the following:

1. To promote co-operation and exchange of information in the area of earthquake engineering by promoting active participation in the symposia and speciality conferences as it was done so successfully by TC4 during the period 1984-1993.
2. To represent the interest of ISSMFE and to promote its participation in all activities linked to the International Decade for Natural Disaster Reduction with respect to earthquake problems.
3. To continue liaison with the International Association for Earthquake Engineering.
4. To establish liaison with EEC in relation to problems such as Human Capital and Mobility that involve different research activities specifically linked to the area of the Geotechnique Earthquake Engineering, i.e. stability of slopes during earthquakes, bearing capacity of shallow foundations subject to seismic loading.
5. To explore with the Organising Committee the possibility to participate actively in the program of the next Hamburg XIV ICSMFE e.g. organising a Specially Session, or a Discussion Session or a Special Lecture.

3 TC4 MEMBERS

The following members were pointed by the National Geotechnical Societies for the Technical Committee 4:

Ansal, A. (Turkey)	Kokusho, T. (Japan)
Bard, P.Y. (France)	Maugeri, M. (Italy)
Bodare, A. (Sweden)	Mora, S. (Costa Rica)
Bouckovalas, B. (Greece)	Murria, J. (Venezuela)
Cheng, H. C. (Taiwan)	Nadim, F. (Norway)
Diaz, R. M. (Ecuador)	Nordal, S. (Norway)
Finn, W.D.L. (Canada)	Ortigosa, P. (Chile)
Foged, N. (Denmark)	Palacio, J. (Ecuador)
Frydman, S. (Israel)	Pecker, A. (France)
Gatmiri, B. (Iran)	Pinto, P.S.S. (Portugal)
Gazetas, G. (Greece)	Pires, J.A. (USA)
Germanov, T. (Bulgaria)	Prakash, S. (USA)
Guzman, A.A. (Colombia)	Saeed, I. (Pakistan)
Hurtado, J.A. (Peru)	Saran, S. (India)
Idriss, I. (USA)	Steedman, S. (UK)
Ilyichev, V.A. (Russia)	Van Impe, W.F. (Belgium)
Ishihara, K. (Japan)	Yasuda, S. (Japan)
Justo, J. L. (Spain)	Youd, T.L. (USA)

4 TC4 MEETINGS

The first TC4 meeting held on April 4, 1995, in St. Louis, USA, during the Third International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics. Eleven members and four observers from the following countries: France, Greece, Italy, Japan, Norway, Portugal, Sweden, United Kingdom and USA have attended this meeting.

The second TC4 meeting held on May 31, 1995, in Copenhagen, Denmark, during the XI European Conference on Soil Mechanics and Foundations Engineering. Seven members from the following countries: Denmark, Greece, Italy, Japan, Norway, Portugal and Sweden have attended this meeting.

The third meeting held on November 15, 1995, in Tokyo, Japan, during the First International Earthquake Geotechnical Engineering Conference. Eleven members and eight observers from the following countries: France, Italy, Japan, Portugal, Taiwan, Turkey, USA and Venezuela have attended this meeting.

The fourth meeting held on June 15, 1996, in Acapulco, Mexico, during the 11th World Conference of Earthquake Engineering. Eleven members and eight observers from the following countries: France, Italy, Japan, Portugal, Taiwan, Turkey, USA and Venezuela have attended this meeting.

The fifth meeting took place on September 1997, in Hamburg, Germany, during the XIVth International Conference on Soil Mechanics and Foundation Engineering.

5 TC4 ACTIVITIES

The following topics have been discussed:

- Applications of the Manual for Zonation in Seismic Geotechnical Hazard to several countries in order to improve and to extend the first edition.
- Comments related with Eurocode 8 - Part 5 Foundations, Retaining Structures and Geotechnical Aspects.

6 CO-OPERATION AND EXCHANGE OF INFORMATION

Active participation to divulge the Manual for Zonation in Seismic Geotechnical was performed in the following events:

3rd National Earthquake Engineering Conference in Turkey (150 delegates);

Short Course on Geotechnical Aspects on Earthquake Engineering Pile Dynamics in Bangkok (70 delegates);

2nd Coloquio Internacional sobre Microzonificación Sísmica, in Venezuela (80 delegates);

Introduction of the Manual of Zonation in Nice, October 1995, during the Fifth International Conference on Seismic Zonation.

Promotion of the following Conferences, Workshops and Special Sessions:

IS Tokyo 95 "First International Conference on Earthquake Geotechnical Engineering", November, 1995, Tokyo;

Special Session on "Lessons Learned from Northridge and Kobe Earthquakes" during 11 WCEE in Mexico, June 1996.

Workshop "Earthquake Geotechnical Engineering", Roorkee, India, September, 1996.

Workshop "Dynamic Analysis of Embankment Dams", Lima, October, 1996;

Special Session on "Earthquake Geotechnical Engineering" on September 1997, in Hamburg, Germany, during the XIV th International Conference on Soil Mechanics and Foundation Engineering.

7 PUBLISHED DOCUMENTS

Related with the above events the following documents were published:

II Coloquio Internacional sobre Microzonificación Sísmica y V Reunion De Cooperación Interamericana. Programa y Resúmenes. Informe Funvisis, 1995.

Earthquake Geotechnical Engineering-Proceedings of IS-Tokyo '95. The first International Conference on Earthquake Geotechnical Engineering. Edited by Kenji Ishihara. Published by A. Balkema, November, 1995.

Special Session on "Lessons Learned from Northridge and Kobe Earthquakes". A collection of 10 selected papers. Proceedings of 11 th WCEE in Mexico, June 1996.

Design Practices in Earthquake Geotechnical Engineering. Proceedings of the Workshop on Design Practices in Earthquake Geotechnical Engineering, Roorkee, Editors Swami Saran and R. Anbalagan, September, 1996.

Seismic Behaviour of Earth Structures and Ground Special Volume. XIV th International Conference on Soil Mechanics and Foundation Engineering, Hamburg. Edited by P. Sêco e Pinto. Published by A. Balkema, 1997.

8 INTERACTION WITH OTHER SOCIETIES

Joint activity with European Association for Earthquake Engineering and participation on Task Group 6 "Earthquake Geotechnical Engineering and Microzonation" and Working Group 4 "European Seismological Commission on Microzonation".

Interaction with the International Association for Earthquake Engineering and organisation of the Special Session intitled "Lessons Learned from Northridge and Kobe Earthquakes" during 11 th WCEE in Mexico, June 1996.

9 FINAL REMARKS

I would like to express my deep gratitude to the membership of TC4 who have collaborated so enthusiastically on the work of the Technical Committee.

I would like also to thank the support of Portuguese Society for Geotechnique.

I believe that the activity of TC4 "Earthquake Geotechnical Engineering" should continue during the 1997-2001 tenure. The final decision will be taken by the future ISSMFE President certainly. As suggestions two topics can be implemented: the liquefaction countermeasures and the Retrofit Manual.

Related with exchange of information the following actions should be implemented:

Seminar on Microzonation in AIT (tentative date, December, 1998);

Second International Conference on Earthquake Geotechnical Engineering, June 1999, Lisbon;

To explore with the Organising Committee of GEO 2000 an organisation of a Special Session in Australia;

To explore with the Organising Committee of XII WCEE an organisation of a Special Session in NEW Zealand, 2000.

To explore with the Organising Committee of XV ISSMFE an organisation of a Special Session in Istanbul, 2001.

Grants should be offered by the Organising Committees of ISSMFE Conferences for the participation of members of Geotechnical Societies from East Europe (e.g. Bulgaria, Poland, Romania, Russia, etc.) due their great financial difficulties.