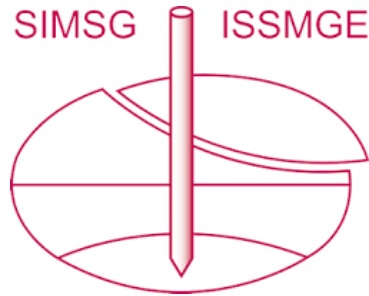


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TC 19 Preservation of Historic Sites – Administrative Report

TC 19 Préservation des Cites Historiques – Report Administrative

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ABSTRACT

The activities of the TC 19 during the period 2005-2009 are presented. The preparation of a set of guidelines on the Geotechnical Aspects of the Preservation of Monuments and Historic Sites has been continued.

RÉSUMÉ

Les activités du TC 19 pendant les années 2005-2009 sont présentes. La préparation d'un group d'instruction sur les Aspects Géotechnique de la Préservation des Monuments et des Cites Historiques est continuée.

1 INTRODUCTION

The Technical Committee TC 19 is committed to the safeguard of monuments and historic sites. It was established in 1981, based on an idea of the late Prof. Croce and the late Prof. Kerisel. The first chairmanship was shared between France (Prof. Kerisel) and Italy (Prof. Croce, Prof. Jappelli and Prof. Viggiani); accordingly, the French and the Italian Societies of Soil Mechanics acted as sponsor societies of the Committee.

The Committee performed many activities during previous terms.

Special volumes on the preservation of historic sites were presented at the XII International Conference on Soil Mechanics and Foundation Engineering (Rio de Janeiro, 1989) and the X European Conference on Soil Mechanics and Foundation Engineering (Florence, 1991).

An International Symposium on "Geotechnical Engineering for the Preservation of Monuments and Historic Sites", dedicated to the memory of Prof. Arrigo Croce, was organized in Naples in 1996.

Finally, during the last International Conference on Soil Mechanics and Geotechnical Engineering in Osaka, Japan, in 2005, the Technical Session 4c was devoted to the "Preservation of Historic Sites". Y. Iwasaki was the general reporter, and three panelists presented discussion topics on Authenticity of Historical Structures and their Foundations (C. Tsatsanifos - Greece) and on the Characteristics of Historic Sites and Geotechnical Analysis (T. Tamano - Japan and M.B. Lisyuk - Russia). Furthermore, seven Case Studies on How the Historical Site was Preserved were presented (E. Santoyo – Mexico, K. Avellan – Finland, H. Arii – Japan, V.M. Santoro – Italy, J.L. Justo – Spain, S. Hayashi – Japan and M. Bustamante (France). The Session was chaired by V. A. Ilyichev (Russia).



Fig. 1. Participants of the TS 4c of the Osaka 2005 ICSMGE

2 ISSMGE TC 19 – FIGS JTC 6

Following the decision of the newly established Federation of International Geoengineering Societies, the TC19 ceased to exist immediately after the Osaka Conference and a new Joint Technical Committee on the Preservation of Historic Sites and Monuments (JTC6) was inaugurated, under the responsibility of IAEG and chaired by Prof. B. Christaras, Engineering Geologist from the Aristotle University of Thessaloniki, Greece. Core members were appointed C. Tsatsanifos – Greece, Dr. Efrain Ovando-Shelley – Mexico and Dr. Yoshinori Iwasaki – Japan (from ISSMGE), Yosef Hatzor – Israel, Emilio Velloso Barroso – Brazil and José Vieira de Lemos – Portugal (from ISRM) and C. Margottini – Italy and H. Li - China (from IAEG).

However, because of organizational problem this new committee was not activated and TC 19 Co-Chairman Christos Tsatsanifos proposed to the ISSMGE President Pedro Seco e Pinto the reactivation of the TC 19 until the Alexandria Conference for fulfilling its terms of reference. The proposal was accepted in August 2008.

3 TERMS OF REFERENCE

The following terms of reference have been set:

- To promote co-operation and exchange of scientific and technical information on the geotechnical aspects of preservation of monuments and historic sites.
- To collect a number of well-documented case histories to gradually develop general criteria and, in perspective, guidelines for geotechnical investigations, analysis and interventions.
- To present the work performed in a Satellite Conference or in an Open Meeting of the TC19 during the XVII ICSMGE in Alexandria in October 2009.

4 MEMBERS OF THE COMMITTEE

The committee is chaired by Dr. Christos Tsatsanifos (Greece) and the Hellenic Society for Soil Mechanics and Geotechnical Engineering acts as sponsor society for the Committee. Secretary of the Committee is Dr. Prodromos Psarropoulos (Greece).

The Honorary and Core members of the Committee are Prof. Michele Jamiolkowski (Italy), Prof. Ruggiero Jappelli (Italy), Prof. Carlo Viggiani (Italy), Prof. Atilla Ansal (Turkey), Prof. Stefano Aversa (Italy), Prof. John B. Burland (UK), Prof. Gio-

vanni Calabresi (Italy), Dr. Yoshinori Iwasaki (Japan), Dr. Efrain Ovando-Shelley (Mexico), Prof. Kiriazis Pitolakis (Greece), Prof. Hubert Quick (Germany) and Prof. V.M. Ulitski (Russia).

5 ACTIVITIES

5.1 Scientific Events

During the 4th International Conference on Earthquake Geotechnical Engineering, held in Thessaloniki, Greece, in June 2007, the Workshop 2 on “Earthquake Geotechnical Engineering related to Monuments and Historic Sites” was organized and chaired by Christos Tsatsanifos and Kyriazis Pitolakis. Michele Jamiolkowski (Italy) presented the Invited Lecture on “Behavior of the leaning tower of Pisa after stabilization works” and three panelists presented discussion topics on “Using Classical Monuments for the Assessment of Past Earthquake Scenarios” (Ioannis Psycharis – Greece), “Regional Subsidence and Earthquakes as Threats to Architectural Monuments in Mexico City” (Efrain Ovando-Shelley – Mexico) and “Design and Implementation of Engineering Measures for the Protection of a Historical Monument at the Seismic Area of Mount Athos Peninsula Greece” (Stavros Bandis – Greece). Furthermore, there were 17 oral presentations of case studies related to the Reverse Problem – Backward Analysis (2), Earthquake Reconnaissance Report (1), Site Response (4), Response of Monumental Geotechnical Structures During Earthquakes (4), Response of Structures During Earthquakes (6), Geotechnical Effects on Monuments (1), Wind Loading of Monuments (1) and Restoration of Monuments (1), followed by a discussion session chaired by Francesco Silvestri – Italy.

The Czech and Slovak National Committee of the ISSMGE invited Christos Tsatsanifos to deliver the XVI Prague Geotechnical Lecture in May 2008. The title of the lecture was “Building in Ancient Cities: Geotechnical Engineering Challenges” and consisted of two main parts; the first referred to the principles of conservation and restoration of monuments and historic sites, as applied to geotechnical engineering as well as to the methods of the intervention to monuments; in the second part a series of case studies related to protection and preservation of monuments was presented.

The Czech and Slovak National Committee of the ISSMGE organized in May 27, 2008 the workshop “Importance of Geotechnical Engineering during protection of historical buildings – interaction of new buildings with old ones”. Christos Tsatsanifos was the workshop moderator and introduced the problem to the participants. Prof. Ivan Vanicek chaired the workshop.

5.2 TC 19 Web Site

The web site that has been developed for TC 19 during the previous term is located in the main frame of webforum site (www.webforum.com/tc19). Information regarding the activities of the Committee is given and some significant papers as well as national guidelines on the preservation of monuments are presented. Also information is given regarding feature events of the interests of the Committee (see Fig. 2).

5.3 Guidelines on the Geotechnical Aspects of the Preservation of Monuments and Historic Sites

The preparation of a set of guidelines on the Geotechnical Aspects of the Preservation of Monuments and Historic Sites started in the previous term of the committee and continued in the current term. A tentative index has been agreed (see below).



Fig. 2 The Home Page of the TC 19 web site

Guidelines on the Geotechnical Aspects of the Preservation of Monuments and Historic Sites Tentative Index

Part I - General Principles

This part should focus on the principles of conservation and restoration, as applied to Geotechnical Engineering. Concepts as material and historical integrity should be introduced. Some very important examples could be quoted in support of the general statements.

- Ground Monument System
- Peculiarities of Monuments and Historic Sites from an Engineering Viewpoint – Requisites of Interventions
- Diagnosis (investigations including history; monitoring; analyses)
- General Principles of the Interventions (respect of the integrity; durability)
- Monitoring

Part II – Specific Problems

- Foundations
- Cliffs
- Urban Areas
- Landslides
- General Subsidence
- Effects of New Structures on Monuments

Part III - National Reports

- Collection of Existing Regulations and Codes of Practice
- List of the Main Problems
- Relevant Case Histories

The work that has been done will be presented in the Satellite Conference on “Preservation of Monuments and Historic Sites” during the XVII ICSMGE in Alexandria in October 2009.