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ARAB AMERICAN ASSOCIATION OF ENGINEERS AND ARCHITECTS (AAAEA)
ASCE ILLINOIS SECTION - GEOTECHNICAL GROUP
ASCE ILLINOIS SECTION - STRUCTURAL GROUP
JOINT DINNER MEETING

Differential Settlement Induced Instability and Stabilization of Leaning Structures: The Example of the Tower of Pisa

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Settlement of structures is a routine consideration of civil engineers in the design process. As soil conditions usually vary within a given site and load distribution vary within a given structure, uniform settlement of the structure is rare and differential settlement is in most cases a cause of severe structural damage. Preventing and mitigating differential settlements has presented major challenges to the civil engineering profession through the ages. The Leaning Tower of Pisa in Italy is probably the most well known example illustrating the effect of differential settlement on structures. The Tower has presented a fascinating story since the Year of 1173 and a different set of challenges to engineers for centuries. In 1990 the Italian Government appointed an International Committee to safeguard and stabilize the Tower. Studies carried out by physical modeling at natural gravity and in the centrifuge, by numerical modeling and large scale experiments, lead to the conclusion that the tower was very nearly in a state of neutral equilibrium- a transition stage to overturning.

This presentation will describe some fundamental aspects of structural settlement and use the Tower's history, causes of settlement, various remedial attempts, and the final stabilization solution to illustrate the complexity of the settlement issue and engineering ingenuity required.

Dr. Mihail E. Popescu has more than 30 years of experience in geotechnical engineering consulting, research, and education. Responsible for geotechnical support in preparation of conceptual design package, functional design criteria, closure plans and specifications for design, construction and safety of a wide variety of geotechnical engineering projects including industrial, commercial, residential, and infrastructure development and environmental restoration projects. Worked in Romania, U.K., Japan, South Africa, and, starting with 2000, in USA. Interfaced with major international consultants and contractors. More than 100 research papers in refereed journals and conference proceedings. Keynote Speaker and General Reporter at international conferences and symposia. Leader of UNESCO and NATO international research groups and programs. Professor and Visiting Professor at several Universities. Member of the ISSMGE-IAEG-ISRM Joint Technical Committee on Landslides.

Date:	Thursday, August 31, 2006
Time:	5:30 p.m. Social 6:00 p.m. Dinner 7:00 p.m. Presentation (PDH: 1 Hour)
Place:	University of Illinois at Chicago (UIC) ERF "Engineering Research Facilities" 842 West Taylor Room # 1047, Chicago UIC
Cost:	$15 / $5 Students – RSVP before COB Tuesday August 29, 2006 $20.00 – at door or RSVP after August 29, 2006

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