

**VISITING PROFESSIONAL REPORT 2001-2002:
DR. JOHN HOOPER
Skilling Ward Magnusson Barkshire, Seattle, WA**

Introduction

In the middle of Fall 2001, the University of Michigan Earthquake Engineering Research Institute (UM-EERI) Student Chapter had requested support for the 2001-2002 academic year from the EERI Visiting Professionals Program to invite a professional engineer to give a presentation at the University of Michigan.

The UM-EERI Student Chapter invited Dr. John Hooper from Skilling Ward Magnusson Barkshire, Seattle, upon receiving a positive response, from the EERI Visiting Professional Program.

Dr. John Hooper kindly accepted our invitation. The visit was scheduled on November 28, 2001 and was sponsored by the Friedman Family Visiting Professionals Program of EERI, whose purpose is among others to enhance the understanding of the multidisciplinary nature of earthquake engineering.

Earthquake Engineering Seminar Series

Dr. Hooper's presentation was included in a seminar series at UM on earthquake engineering topics. The purpose of the seminar series is to widen accessibility to timely, technical presentations by students, researchers, visitors, at UM.

The sponsor of the seminar series is, in addition to the UM-EERI Student Chapter, the University of Michigan Engineering Council (UMEC). During his visit, he had two very educational presentations, which will be described in the following section.

Dr. Hooper's 1st Presentation (Performance-Based Seismic Design Issues for Special Truss Moment Frames and Concrete Core Wall High-Rise Buildings)

The first seminar started with Siddhartha Ghosh, the UM-EERI student chapter president for 2001-2002, first, welcoming 25 attendants to the seminar and then giving a brief introduction on the purpose of the seminar series and its sponsors. Subsequently, Xuemei Liang, the UM-EERI secretary for 2001-2002, introduced the speaker with a few background remarks and announced the topic of the first presentation title: **"Performance-Based Seismic Design Issues for Special Truss Moment Frames and Concrete Core Wall High-Rise Buildings"**

Dr. Hooper's presentation began with an introduction of two typical structures used in low and high-rise buildings: 1) Special Truss Moment Frames (STMF), and 2) Concrete Core Wall (CCW) Systems. He explained methods to obtain buildings of predictable and good seismic performance. Subsequently, he introduced a preliminary design for both systems. Then, Dr. Hooper emphasized and showed an example of the application of performance-based seismic design (PBSD) for STMF and concrete core wall systems.

The presentation was followed by a question and answer session. Questions were mainly regarding the implication of PBSD for STMF and CCW system. Dr. Hooper and audience

discussed the questions and suggested many useful aspects regarding STMF and CCW. Dr. Hooper concluded the seminar after the questions and discussion session.

After finishing his first presentation, the Department of Civil and Environmental Engineering at UM invited Dr. Hooper to join lunch with faculty members and EERI officers. Dr. Hooper made a small presentation to faculty members about the World Trade Center twin towers that were designed by Skilling Ward Magnusson Barkshire. Then, he prepared himself for his second presentation.

Dr. Hooper's 2nd Presentation (Seismic Changes in the Built Environment)

In the evening of November 28, 2002, Dr. Hooper made a second presentation. Thanasak Wongtanakitcharoen, the UM-EERI student chapter secretary kindly welcomed 25 attendants to the second seminar, "**Seismic Changes in the Built Environment**". In this second presentation Dr. Hooper discussed significant reductions in vulnerability from earthquakes that can be achieved by improving the performance of new and existing systems within the built environment. These systems include structural and nonstructural components of buildings and industrial plants, and lifelines. Pre-event strategies include the exploration and adoption of new materials and innovative structural systems, such as advanced composites and adaptive structural systems. Cost-effective applications to the retrofit of existing vulnerable structures and systems are expected to flow from these developments.

Meetings with Faculty and Students

After his presentation, Dr. Hooper met and discussed with other faculty members and students involved in the field of earthquake engineering. This meeting turned out to be very useful to the interested students, as Dr. Hooper was able to give advice relevant to their research topics.

Picture



Dr. John Hooper (4th from left) with EERI officers

Social Events

Dr. Hooper's visit lasted two days and the social events were therefore limited due to his tight schedule. However, the Department of Civil and Environmental Engineering at UM had the opportunity invite Dr. Hooper to join a few faculty members and EERI officers for lunch and dinner.

Final Remarks

The UM-EERI is truly grateful for the support that the EERI and the Friedman Family Visiting Professionals Program have given us regarding Dr. Hooper's visit. We expect that Dr. Hooper's visit represents the beginning of a close relationship between the UM EERI student chapter and the earthquake engineering industry. Both seminars were both highly interesting and educational for our student members as well as faculty members at the Department of Civil and Environmental Engineering at UM.