2/11/2008

THE UNIVERSITY OF TEXAS AT AUSTIN

FRIEDMAN FAMILY VISITING PROFESSIONAL PROGRAM REPORT

Mr. Sigmund A. Freeman

Principal of Wiss, Janney, ElstnerAssociates, Inc. (WJE)

A Introduction

The University of Texas at Austin EERI student Chapter invited Mr. Sigmund A. Freeman of Wiss, Janney, Elstner Associates to speak on the effects of earthquake loading on buildings on February 11th, 2008 as part of the Friedman Family Visiting Professionals Program. Mr. Freeman kindly accepted the invitation.

Figure 1 Mr. Sigmund A. Freeman

B Seminar

Mr. Freeman's presentation was titled "Effects of Earthquake Loading on Buildings". During the presentation he introduced his 40 years of experience in the field of earthquake engineering, relationship of earthquake building code criteria to structural dynamics, and the development of performance based structural engineering. After briefly covering structural dynamics terminology, he discussed developing techniques for conceptualizing building performance in the nonlinear range and to applying these techniques to real buildings. He established the grounds for Capacity Spectrum Method (CSM) by introducing the ADRS format now in worldwide use for displaying "capacity spectrum" and response spectrum plots. CSM is an intuitive graphical procedure that can quickly estimate the vulnerability of buildings being damaged by strong earthquake ground motion. The presentation outlined some of the unique measures to improve the seismic capacity and weaknesses for countless structures.

Figure 2. Seminar

Figure 3 Seminar

The presentation was well attended by both the faculty and students of the University of Texas at Austin.

C Reception

Following the seminar a reception was held in order to give the students a chance to ask more questions and to talk to Mr. Freeman. The reception lasted for an hour and included an energized discussion on some of the topics from the seminar. Again the reception was well attended by students. The reception served snacks and drinks.

Figure 4. Reception

D Social Activities

In addition to the reception and seminar, Mr. Freeman enjoyed some social activities in Austin. In the evening, he enjoyed genuine Texas Barbecue at the Ironworks Restaurant. Also present at the dinner were, EERI Student Chapter President Albert Kottke and geotechenical engineering graduate student Ranjiv Gupta.

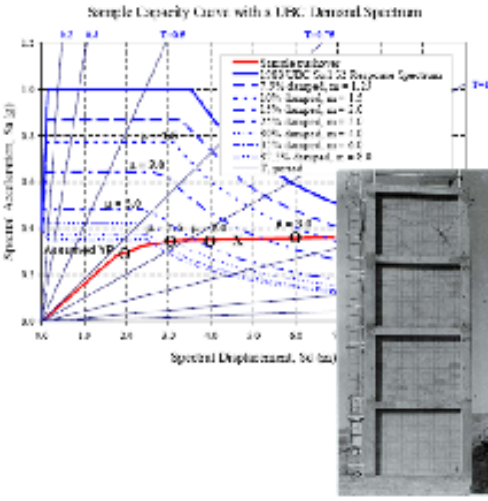
Before the seminar Mr. Freeman had the opportunity to talk with many of the UT faculty, including Prof. Ellen Rathje, Prof. Sharon Wood, Prof. Richard Klingner, and Prof. James Jirsa. After the seminar Mr. Freeman toured the Fergusson Structural Engineering Laboratory and learned about some of the latest research work ongoing at University of Texas at Austin. Mr. Freeman expressed how much he enjoyed the visit.

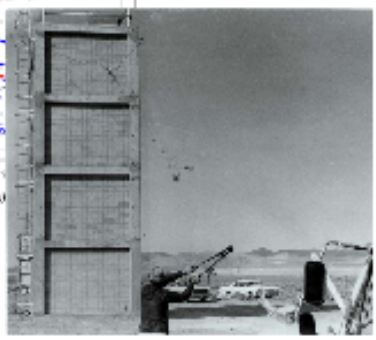
Earthquake Engineering Research Institute

UT-Austin Student Chapter

presents

Effects of Earthquake Loading on Buildings





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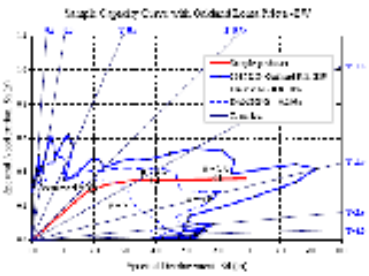
The presentation will include a brief introduction to Mr. Freeman's 40 years of experience in the field of earthquake engineering, relationship of earthquake building code criteria to structural dynamics, and the development of performance based structural engineering. Included will be a discussion and examples of the Capacity Spectrum Method, which is an intuitive graphical procedure that can quickly estimate the vulnerability of buildings being damaged by strong earthquake ground motion.

Sigmund A. Freeman is the originator of the Capacity Spectrum Method and has been at the forefront of performance-based engineering since before the term was popularized. He has devoted his career to developing techniques for conceptualizing building performance in the nonlinear range and to applying these techniques to real buildings. Mr. Freeman was responsible for introducing the ADRS format now in worldwide use for displaying "capacity spectrum" and response spectrum plots and is primarily responsible for developing the first multi-mode pushover procedure. During his 48 year career, he has evaluated the seismic capacity and weaknesses for countless structures and had developed measures to improve a great many of them. Mr. Freeman has authored over 40 technical papers and presented lectures on various aspects of earthquake engineering. He participated in several Applied Technology Council (ATC) and U.S./Japan cooperative projects on seismic design and structural evaluation.

Prior to joining WJE, Mr. Freeman was with the firm of John A. Blume & Associates, Engineers, from 1958 to 1981; and the State of California Bridge Department and the Division of Bay Toll Crossings, from 1955 to 1958. Mr. Freeman joined WJE in 1981. He has served as both peer reviewer and consultant for the cities of San Francisco, Oakland and San Jose. He has participated in research projects, professional technical committees, and post earthquake damage evaluations (e.g., 1989 Loma Prieta and 1994 Northridge earthquakes).



Monday, February 11, 2008

12:00 – 1:00 pm @ ECJ 5.410

Reception: 1:00 – 2:00 pm @ ECJ 4.304

Refreshments provided

Any Questions? Please contact: Sezgin Kucukcoban (ksezgin@mail.utexas.edu)