

TASK GROUP (TG) 8: SEISMIC BEHAVIOUR OF IRREGULAR AND COMPLEX STRUCTURES

By A.Rutenberg, Coordinator of TG8

Activity Report

TG8 was established in August 1994 as a working Group (WG12). In 1995 its scope of activities was extended, and it was reorganized as a Task Group, the purpose of which is to promote research as well as to disseminate knowledge by means of providing forums for scientific exchange in the field.

Activities to date:

Activities up to 1999 were reported in the EAEE Bulletin's issues of December 1995, August 1998 and December 1999. In the following more recent activities are summarized.

Experimental Research

The recognition that lack of experimental validation of theoretical research findings was hampering the updating of process for earthquake design provisions relating to irregular led to a series of shaking-table tests at the University of Bristol Earthquake Research Centre facility. Professor M. De Stefano, DR. T. Trombetti and the writer designed the model, and it consists of a three storey mass eccentric steel frame, as shown schematically in the Figure. The model was excited bi-directionally by the two components of the 1940 El Centro earthquake. The specimen was built and tested under the supervision of Dr. C. Taylor and Dr. A. Crewe of the Bristol University Earthquake Engineering Research Centre. The analysis of the data was completed, and a full report on the tests, including comparisons with the analytical results has been published by the Centre.

Workshops

* Two Proceedings volumes of the Second European Workshop on the Seismic Behaviour of Asymmetric and Irregular Buildings held in Istanbul on October 8-9, 1999 (see Dec. 1999 issue of the EAEE Bulletin) were published, and distributed to the participants. Information on availability of copies can be obtained from Prof. F. Karadogan, Istanbul Technical University (Bulletin's Editor address).

* A third workshop, to be hosted by the University of Firenze, and organized by Professors G. Sara and M. De Stefano, is slated for September 16-17, 2002. Invitations to members of TG8 and other prospective participants have been sent. A Proceedings volume will be published after the event.

Publications

Rutenberg, A., "EAEE Task Group (TG) 8: Behaviour of Irregular and Complex Structures. State of the Art Report: Seismic Nonlinear Response of Code-Designed Asymmetric Structures". CD-ROM Proc. 11th European Conf. Earthquake Engineering, Paris, Sept. 1998, Balkema, Rotterdam, Sept. 1998.

Karadogan, F and Rutenberg, A. Eds., "Irregular Structures", Proceedings of the 2nd European Workshop on seismic behaviour of Asymmetric and Irregular Structures, Istanbul Technical University, Vol.1, Oct.1999, vol.2, Oct. 2000.

De Stefano, M. et al. "an experimental Research on the Seismic Response of an Asymmetric Steel Frame" (tentative title). CAFEEL Report XX, Bristol, 2001. (in final stages of preparation, June 2001).