Research and Development of Active Control Systems

by Tsu T. Soong

Abstract

Research and development of full-scale active control systems has been a main focus of this research project involving researchers and engineers from MTS Systems Corporation of Minneapolis, the Takenaka Corporation and Kayaba Industries of Japan, as well as NCEER researchers The major objective was to develop two full-scale active systems, an active bracing system and an active mass damper system, so that implementational issues could be identified and addressed, their performance under actual wind loads and earthquakes could be evaluated, and design guidelines for these systems could be developed.

Through a carefully planned analytical and experimental program, this research effort has led to implementation of these systems in full-scale structures. Observed performance of these systems under actual wind and earthquake loads shows that the concept of active control, originated more than 20 years ago, has led to the successful development of active devices for civil engineering structural control.

Collaboration

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