HUMAN RESPONSE TO FLOOR AND FOOTBRIDGE VIBRATIONS

Floor vibrations are probably the most critical serviceability issue for steel framed buildings. Today’s more efficient floor systems together with sparse office-fit out require designers to carefully consider vibration concerns due to all types of human activity. In particular, office fit-out has dramatically changed in the last decade resulting in many floor vibration problems because of the lack of mass and damping. Rhythmic activities in office buildings, such as aerobics in health clubs, have also generated significant problems in the form of complaints from occupants elsewhere in the buildings. Equally important is the vibration, both vertical and lateral, of footbridges. Recent lateral vibration problems with footbridges in the United Kingdom and New Zealand have caused closure and required extensive retrofitting. A general overview of human response to floor and footbridge vibrations, including recommended design procedures, will be presented. Criteria in the AISC/CISC Design Guide 11 Floor Vibrations due to Human Activity and that from recently completed research will be discussed.

Thursday, December 1, 2011
1:30 P.M.
Robert Smith Seminar Room
Physics Research Building
191 W. Woodruff Ave.
Host: Hojjat Adeli (phone: 614-292-7929)