Northeastern University
Distinguished Seminar Series
Civil & Environmental Engineering

Robert Tremblay, Ph. D.

Professor, Department of Civil, Geological, and Mining Engineering,
École Polytechnique Montréal

Innovative Steel Braced Frame Structures for Resistance to Earthquakes

Over the last two decades, significant changes to seismic design provisions for buildings have been implemented to ensure minimum life safety performance in the event of a large earthquake. These new provisions have posed major challenges to structural design engineers, including more stringent system limitations and greater complexity in analysis, design and construction, which typically have led to cost increases. No consideration has been given in these new code provisions to the reduction of structural damage or downtime periods in case of a strong earthquake event. The presentation will illustrate the impact of new code requirements for steel braced frames, one of the most common lateral load resisting systems for building structures. New braced frame systems that have been specifically developed to improve cost-efficiency while achieving minimum seismic safety objectives will be presented, together with supporting numerical and experimental validation studies. Innovative braced frame solutions that exhibit superior seismic performance to reduce the impact of future strong ground shaking will also be introduced.

Robert Tremblay is a professor in the Department of Civil, Geological, and Mining Engineering at École Polytechnique Montréal. His research includes seismic design, dynamic analysis and stability of structures, steel, concrete, and steel-concrete structures, building and bridge structures, and cold formed steel members. He has also received recognition and awards for the Canada Research Chair in Earthquake Resistant Design and Construction of Building Structures (2003-present), Canadian National Committee on Earthquake Engineering (1995-present), and CSA-S16 Technical Committee on Structural Steel Design (1998-present). Robert Tremblay received his Ph.D. at the University of British Columbia in 1994.

Tuesday, October 18, 2011
1:45 p.m. – 2:45 p.m.
103 Churchill Hall