



Engineering Seminar

Michel Bruneau, Ph.D., P.Eng.

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and

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“Infrastructure Damage from the 9/3/2010 (M_w 7.1) and 2/21/2011 (M_w 6.3) Christchurch (New Zealand) Earthquakes”

ABSTRACT

On September 03, 2010, a 7.1 magnitude earthquake struck the South Island of New Zealand. The epicenter was located approximately 30 miles west of the city of Christchurch, close to the town of Darfield. Six months later, on February 21, 2011, a 6.3 magnitude earthquake struck the town of Lyttelton, approximately 6 miles south-east of Christchurch. Although smaller in magnitude, the February 2011 event resulted in a tragic disaster of more severe consequence than the earlier September 2010 one, with earthquake demands exceeding the design spectra specified by the New Zealand standard in many cases.

On September 11, 2010, Michel Bruneau and Myrto Anagnostopoulou visited Christchurch on behalf of MCEER and the Earthquake Engineering Research Institute (EERI). The team investigated damage to bridges, unreinforced masonry buildings, schools, hospitals, churches and residential houses located in the city of Christchurch and the surrounding Canterbury area. The team focused its investigation on the performance of bridges and steel buildings. On February 27, 2011, Michel Bruneau visited Christchurch on behalf of MCEER, revisiting the same area surveyed after the September, 2010 event, as well as other structures. The investigation again focused on structural damage of bridges and steel buildings.

This presentation discusses the September, 2010 and February, 2011 events focusing on observations and preliminary findings on the structural behavior of buildings and bridges.

DATE: Thursday, March 31, 2011

TIME: 2:00 P.M.

LOCATION: 140 KETTER HALL, NORTH CAMPUS, UNIVERSITY AT BUFFALO

ORGANIZED BY: CSEE-GSA, Student Chapter of EERI at UB, MCEER and Dept. of CSEE

Refreshments will be served !!!

Michel Bruneau, Ph.D., P.Eng.
Professor, CSEE, University at Buffalo



Michel Bruneau has conducted extensive research on the evaluation and retrofit of existing bridges and buildings subjected to large destructive forces up to collapse, including the development of multi-hazard resistant design concepts capable of simultaneously providing an adequate level of protection against collapse under both seismic and blast loading. This work has contributed to the adoption of special design requirements for ductile steel walls, ductile bridge diaphragms, tubular eccentrically braced frames, structural fuses, and controlled-rocking piers. Dr. Bruneau has authored and co-authored over 100 referred journal papers, 200 papers in conference proceedings, and 50 research and engineering reports, in addition to 2 textbooks, 5 textbook chapters, and two fiction books. He has received many awards for his work. Dr. Bruneau served as Director (2003-2008) and Deputy Director (1998-2003) of MCEER. His past service to the profession include participation in many expert peer review panels, project advisory committees, special project design teams, conference steering and advisory committees, and journal editorial boards.

Myrto Anagnostopoulou, M.Sc.
UB-SEESL Structural and Test Engineer, CSEE, University at Buffalo



Myrto Anagnostopoulou received her diploma in Civil Engineering with emphasis in Structural Engineering from the Aristotle University of Thessaloniki (Greece, 2004). From 2005 to 2007, she worked as a Structural Engineer for a private engineering consulting company in Athens (Greece). Ms. Anagnostopoulou obtained her Masters in Earthquake Engineering from the Centre for Post-Graduate Training and Research in Earthquake Engineering and Engineering Seismology - ROSE School (Italy, 2009). Ms. Anagnostopoulou completed her Master's Thesis at the UB's Department of Civil, Structural and Environmental Engineering (CSEE) and conducted research on the seismic design and analysis of precast segmental concrete bridges. As a UB-SEESL Structural Engineer, Ms. Anagnostopoulou is involved in the designing and construction of test specimens for government and industry-sponsored programs, testing of structural components and equipment, and processing of experimental data for seismic qualification reports.