DEPARTMENT OF CIVIL, STRUCTURAL AND ENVIRONMENTAL ENGINEERING

University at Buffalo
The State University of New York

CSEE GRADUATE STUDENT ASSOCIATION

Student Chapter
University at Buffalo

MCEER
EARTHQUAKE ENGINEERING TO EXTREME EVENTS

"T. T. Soong Student Lecture Series"
University at Buffalo

Roberto Leon, P.E., Ph.D.

David H. Burrows Professor
Virginia Tech, Blacksburg, VA

"Performance of URM and RC Structures in the Feb. 22 2011 Christchurch Earthquake: Lessons for USA Practice"

ABSTRACT

The 6.3-magnitude earthquake that devastated the major New Zealand city of Christchurch on Tuesday, Feb. 22, took at least 163 lives and severely damaged much of the city's critical infrastructure. Dr. Roberto T. Leon was in Christchurch for a teaching fellowship at the University of Canterbury when the event occurred. In this talk he will describe the behavior of unreinforced masonry (URM) and reinforced concrete structures during the unusual series of events before and after this major shock. This earthquake has great lesson for USA practice. For example, the design of beam-to-column joints in reinforced concrete moment frames is one area where USA and New Zealand standards have diverged for many years. USA standards, and ACI 352 in particular, implicitly accept a high level of damage in the form of shear cracking and bar slip for joints subjected to large lateral load reversals. The New Zealand approach, since the mid-1980s, has been to minimize that type of damage and concentrate the deformations in plastic hinges in the beams by carful detailing of the joint region. In addition to engineering information and insights, Dr. Leon will also discuss the rescue/recovery and building assessment efforts in the aftermath.

DATE: **Friday, March 2, 2012**
TIME: **11:00 A.M.**
LOCATION: **140 KETTER HALL, NORTH CAMPUS, UNIVERSITY AT BUFFALO**
WEBCAST URL: **HTTP://CIVIL.ENG.BUFFALO.EDU/WEBCAST/**
TECHNICAL DIFFICULTIES: **SCWHITE@BUFFALO.EDU**
ORGANIZED BY: ***CSEE-GSA, Student Chapter of EERI at UB, MCEER and Dept. of CSEE***

Refreshments will be served !!!

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Roberto Leon received his Ph.D. from the University of Texas at Austin in 1983. From 1983 to 1994 he was assistant and associate professor in the Department of Civil and Mineral Engineering at the University of Minnesota, and became professor in the School of Civil and Environmental Engineering at the Georgia Institute of Technology in 1995. He served as interim Chair of the School from 2002-2003. Currently, he serves as the David H. Burrows Professor in Construction Engineering at Virginia Tech. Dr. Leon is a member of the AISC Committee on Specification, the BSSC Provisions Update Committee, and of several technical committees on steel and composite construction. He is a member of the Board of Governors of the Structural Engineering Institute (SEI/ASCE) and incoming president of the Network for Earthquake Engineering Simulation (NEES).

He has published more than 150 peer-reviewed papers, books, and book chapters, and he has directed or co-directed nearly $7 million of external research funding at Georgia Tech and the University of Minnesota. In addition, he has been part of large, multidisciplinary teams that have collectively conducted over $120 million in research.

The quality of his research has been recognized several times, including his selection by the American Society of Civil Engineers for the Norman Medal and the State-of-the-Art of Civil Engineering Award on two occasions, and his selection to be the 1993 T. R. Higgins Lecturer by the American Institute of Steel Construction.