



Seminar
Department of Civil Engineering and Engineering Mechanics
Columbia University

October 26, 2010 (2:30-3:30 pm)
644 Mudd

Information Assisted Emergency Response — The Role of Sensors in Buildings Under Threat

Abstract:

Extracting useful information from building sensors is a very difficult task. While it has been demonstrated that sensors can be used for building health monitoring or for indoor air quality management, it is clear that this is an evolving technology. The information obtained, while extensive, provides limited insight on the state of a structure and allows only very coarse control of the building environment. This presentation discusses why the use of sensors is necessary for the management of emergencies and why is it possible to use sensor information to steer emergency response. The example of the fire emergency response in complex infrastructure is used to illustrate how sensor data can be assimilated into models of fire and structural behaviour to steer and speed the computations in a manner that simple but precise instructions can be provided to emergency responders.

Biosketch: José L. Torero is the BRE Trust/ RAE Professor of Fire Safety Engineering, Director of the BRE Centre for Fire Safety Engineering and Head of the Institute for Infrastructure and Environment at the University of Edinburgh. Fellow of the Royal Academy of Engineering and the Royal Society of Edinburgh and the 2008 recipient of the Arthur B. Guise Medal by the Society of Fire Protection Engineering for eminent achievement in the advancement of the science of fire safety, he is the author of a book and more than 500 other technical documents for which he has received multiple awards. He is the Editor-in-Chief of Fire Safety Journal, Associate Editor of Combustion Science and Technology and member of the Editorial Board of several other fire related publications. He is the vice-Chair of the International Association for Fire Safety Science, chair of the Fire Safety working Group of the International Council for Tall Buildings and Urban



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Habitat and a member of numerous influential committees and standards development bodies. He is a consultant to many private and government organizations around the world. He is recognized for leading edge research in a broad range of subjects associated to Fire Safety and for the development of many innovative educational programmes in several countries.