



University at Buffalo

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Buckling-Restrained Braces and Other Structural Fuse Strategies for Resilient Bridges

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Abstract

In seismic design, bridges are typically designed such that seismic energy is dissipated by the hysteretic behavior of the columns. As these structural members provide resistance to both the lateral and gravity loads, permanent system deformations and damage following an earthquake would require repairs and possible temporary closure of the bridge. More resilient designs can be achieved by inserting structural fuses in bridges. This presentation will provide an overview of selected recent research on strategies developed to provide resilient bridges. A range of design strategies will be presented, including (among many) the use of buckling-resistant-braces, either in bridge bents or bi-directional ductile diaphragms.

Short Bio

Professor Bruneau has received several national awards and recognitions for his work on the design and behavior of steel structures subjected to earthquakes and blasts, and has recently been inducted as fellow of the Canadian Academy of Engineering. He is also an ASCE Fellow, a member of various AISC and CSA committees developing design specifications for bridges and buildings. He has conducted numerous reconnaissance visits to disaster stricken areas and has served as Director of MCEER. He has also participated in various expert peer review panels, project advisory committees, and special project design teams. A detailed outline of qualifications is available at: www.eng.buffalo.edu/~bruneau

Date: Friday, December 1st, 2017 Time: 11.00 am
Location: 140 Ketter Hall, North Campus, University at Buffalo