



PRESENTATION ABSTRACT

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HAITI 2010 M7.0 EARTHQUAKE: A STRUCTURAL ENGINEERING PERSPECTIVE

PRESENTED BY

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Mark Pierepiekarz, PE, SE, President of MRP Engineering, LLC, was called to Haiti just days after the January 12, 2010 M7.0 earthquake to help evaluate the structural damage to buildings and infrastructure. He offers a local engineer's perspective on why such extensive structural damage occurred, construction and engineering challenges that lie ahead to repair buildings which survived the earthquake, and the methods and technologies available from developed countries which can help rebuild a better and more secure future for the Haitians.

In the days following the initial quake, most residents remained fearful of aftershocks and the stability of the remaining buildings. As Mr. Pierepiekarz toured the Port-au-Prince region, he visited private homes, a school, and other facilities, providing technical support to those affected by the event. Although much of the damage was catastrophic, many buildings survived the effects of the earthquake with repairable damage. Mr. Pierepiekarz saw immediate need for damage assessments, practical repair techniques, and building retrofits that could be employed for the surviving structures in a country with already limited resources stretched even further by this disaster. Skilled structural engineers and contractors from abroad are needed to provide technical and construction expertise, as well as training to rebuild a better future for Haiti.

The Haiti earthquake offers relevant "lessons-learned" for local PNW residents and organizations, ranging in scope from adequate disaster and preparedness planning to pro-active seismic risk evaluation of structures.

PROFESSIONAL EXPERIENCE

Mark Pierepiekarz has 25 years of professional experience focusing on structural and natural hazard engineering. He has performed structural analysis, pro-active retrofit and upgrade design, and repair of impacted commercial, industrial, and public buildings and other facilities throughout the U.S. and abroad. His structural engineering experience also includes wind and earthquake analysis and upgrade design and analysis of bridges, reservoirs, and lifeline systems. Actual strong-motion earthquakes have tested his structural designs with successful results. He has personally performed post-earthquake damage investigations and has written reconnaissance reports following the Haiti (2010), Nisqually (2001), Northridge (1994), Landers/Big Bear (1992), Upland (1990), Loma Prieta (1989), Whittier Narrows (1987), Superstition Hills (1987), and Satsop, Washington (1999) earthquakes. He has performed damage investigations following 2005 Katrina and Rita hurricanes.

Mr. Pierepiekarz has authored and presented a number of technical papers on the seismic design of structures. He is also active in providing input into the development of building codes and standards. Mr. Pierepiekarz recently served as the Past President of the Structural Engineers Association of Washington (SEAW Seattle Chapter), and represented this organization in the "Seattle Fault Scenario" project. He was named 2009 SEAW Seattle Chapter Engineer of the Year.

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